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ABSTRACT

To help equip persons in leadership positions with procedures and techniques needed for obtaining valid and reliable evaluative data, this institute involved 100 applicants, several alternates, and consultants in various planned activities. The institute focused on these major purposes or outcomes: (1) Participants would learn additional knowledges and skills needed for improving vocational education evaluation, (2) Participants would initiate the development of an evaluative plan for use within their agency, (3) Task force groups would interact with the consultants, synthesize the papers presented and make recommendations regarding the most appropriate techniques of evaluation available, and (4) The Institute staff would consolidate the various reports into a general guide on strategies and procedures of evaluation. Evaluation of the institute indicated success in accomplishing the established objectives. Based on a followup of the participants, the major recommendation was that additional institutes be held throughout the country. (Author)

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FINAL REPORT

Project No. 9-0326
Grant No. OEG-0-9-130326-4135(725)

INSTITUTE FOR IMPROVING VOCATIONAL EDUCATION EVALUATION

Robert E. Norton
E. Lamar Love
John A. Rolloff

University of Arkansas
Fayetteville, Arkansas 72701

July 1970

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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The project director wishes to express his sincere appreciation to members of the program planning committee for their valuable advice and assistance in finalizing the institute programs, and to the consultants who served as resource persons for the institute. Many of these individuals spent time above and beyond that for which they were compensated and their efforts contributed much to the success of the institute.

Particular gratitude is extended to the eight task force group leaders and eight recorders who accepted the difficult assignment of seeking group consensus on many areas of concern to program evaluation.

Special appreciation is expressed to Dr. E. Lamar Love who assisted in planning and conducting the institute and in preparing and reviewing various parts of the manuscript. Appreciation is also extended to Dr. John A. Rolloff who assisted in the planning phase of the institute and who reviewed and offered many suggestions for improving the final manuscript. Thanks are also due Mrs. Peggy Patrick for her helpful comments regarding the guides for improving vocational education evaluation.

Finally, the author would express his appreciation to other staff members in the Department of Vocational Education who supported the institute with their ideas and assistance, and to other personnel at the University of Arkansas who assisted so willingly with the many other tasks required for the operation of a successful institute.

SUMMARY

GRANT NO.:	OEG-0-9-130326-4135(725)
TITLE:	Institute for Improving Vocational Education Evaluation
PROJECT DIRECTOR:	Robert E. Norton, Assistant Professor Department of Vocational Education College of Education
INSTITUTION:	University of Arkansas Fayetteville, Arkansas
TRAINING PERIOD:	August 4, 1969 to August 8, 1969

Problem, Purposes, and Objectives

Before programs of vocational education can be improved and before access to programs of high quality can be insured, adequate systems and techniques of program evaluation must be developed and put into operation. Educators are recognizing that the role of evaluation is to design, collect, analyze, and report the data necessary for sound educational decision-making but have not, for lack of adequate preparation taken the necessary steps to fully develop and operationalize effective evaluation programs. It was with an awareness of the problems facing those who must evaluate and recognition of the vital contribution that well-designed evaluations can make to improving vocational education programs that this institute was conducted. The institute was designed specifically to help equip persons in leadership positions with procedures and techniques needed for obtaining valid and reliable evaluative data.

The institute was planned so as to focus on the following four major purposes or expected outcomes: (1) participants would learn additional knowledges and skills needed for improving vocational education evaluation, (2) participants would initiate the development of an evaluation plan having relevance for use within their agency or organization, (3) task force groups would interact with the consultants, synthesize the papers presented and make recommendations regarding the most appropriate techniques of evaluation available, and (4) the institute staff would consolidate the various reports into a general guide on strategies and procedures of evaluation.

To accomplish these outcomes, specific objectives were established as follows:

1. To emphasize the contribution that well-designed evaluations can make to sound educational decision-making (program planning and program improvement).
2. To identify program objectives specified in vocational education legislation and their relationship to evaluation.
3. To recognize the basic requirements essential to program evaluation efforts at the local, state, and national level.

4. To review selected theoretical and operational approaches for evaluating vocational education programs at these levels.

Procedures and Activities

A program planning committee was established and used to help select the consultants and assist in finalizing the institute program. Preparation for the institute also included the purchase of selected references and the solicitation of many other references from various researchers and state departments of education.

To accomplish the purposes and objectives established, a variety of activities were used to enrich the understandings and experiences of the participants during the one-week institute. Included were formal lectures, informal talks, a symposium, large and small group discussions, reaction and questioning panels, small task force assignments, and individual assignments.

One-hundred qualified applicants and several alternates, representing a wide variety of backgrounds and as many states as possible, were selected to attend. Ninety-two persons representing thirty-six states and having responsibilities for evaluating vocational education programs at either the local, area, state, or national level participated in the institute.

Conclusions and Recommendations

Evaluation of the institute included assessment of participant satisfaction with the overall program, a summary of the plans of action developed by the participants, and a follow-up survey conducted eight months after the institute to assess outcomes in terms of participant activities since the institute. From an analysis of the data gathered on the various instruments, it was concluded that the institute was successful in accomplishing the goals which had been established. The combined efforts of the participants, consultants, and institute staff resulted in eight task group reports and a general guide for improving vocational education evaluation.

The major recommendation made is that additional institutes with minor modifications be held throughout the country to meet the needs of others having important responsibilities for program evaluation. Other recommendations included that: (1) consideration be given to holding separate conferences for beginners and those who have had considerable evaluation experience, (2) additional introductory materials be sent to the participants prior to the institute, (3) less emphasis be placed on theoretical approaches and more on how to make practical application of appropriate evaluation techniques, (4) more time be devoted to the task force groups, and (5) the practice of having each participant develop a tentative plan of action be continued.

I. INTRODUCTION

The Problem

Both the Vocational Education Act of 1963 and the Vocational Education Amendments of 1968 provide for, and in fact require, evaluation of vocational education programs. The Declaration of Purpose states in part that funds are authorized to . . . "improve existing programs of vocational education" . . . and that persons of all ages . . . "will have ready access to vocational training or retraining which is of high quality" . . . .

Before existing programs can be "improved" and before access to programs of "high quality" can be insured, adequate systems and techniques of evaluation must be developed and put into operation. The use of quick and often highly subjective devices for appraising the quantity and quality of vocational programs will not suffice. Professional educators are recognizing the importance and complexity of the evaluation process but have not yet taken the necessary steps to fully develop and operationalize any effective evaluation program.

The infant status of evaluation may in part account for the many common shortcomings of past evaluative efforts.

1. Most evaluative efforts have failed to provide valid and reliable information needed to support sound decision-making because of the following:
    a. Reports often contain only impressionistic information
    b. Many reports are almost devoid of hard data
    c. An over-reliance on anecdotal comments
    d. An over-reliance on subjective determinations
2. Evaluations have focused almost entirely on the educational process - curricular organization, staff activities and qualifications, and physical facilities while ignoring program outcomes. Process evaluations by themselves cannot gauge program effectiveness.
3. Evaluations have too often been an after thought, partial and sporadic rather than planned, thorough and continuous.

Unfortunately, the status of evaluation in both vocational and general education today can be summarized as follows:

1. There is a lack of adequate theory pertaining to the nature of evaluations which are needed to effectively accommodate educational programs.
2. There is a lack of knowledge about decision-making processes and information requirements.
3. There is a lack of appropriate evaluation instruments and procedures for gathering data.
4. There is a lack of mechanisms for organizing, processing, and reporting evaluative information.
5. There is a critical shortage of trained evaluators.

It was an awareness of the problems facing those who must evaluate and recognition of the important contribution that well-designed evaluations can make to improving vocational education programs that supported the need for conducting this institute.

Purposes of the Institute

This institute was designed specifically to help equipe persons in leadership positions with knowledges and skills for improving vocational education evaluations. It was designed to provide insights into a relatively unexplored area, and to provide trainees with the techniques and procedures needed for obtaining valid and reliable evaluative data.

The institute also focused on three other major purposes or expected outcomes. First, the efforts of the participants and consultants were directed toward the preparation of eight task group reports. Each group reviewed and synthesized the papers presented and other references available so as to reach a consensus on the strategies and techniques of program evaluation most appropriate for their area of concern. Second, these reports and other references were used by the institute staff to prepare a general guide on strategies and procedures of evaluation that can be used by others responsible for evaluating programs. Third, the participants developed tentative "plans of action" which were relevant for their own particular area and level of responsibility.

Objectives

The objectives stated in the original proposal were delimited and refined by the program planning committee and institute staff. These objectives were used as general guides for selecting the topics to be presented and discussed at the institute. The specific objectives established were as follows:

1. To emphasize the contribution that well-designed evaluations can make to sound educational decision-making (program planning and program improvement).
2. To identify program objectives specified in vocational education legislation and their relationship to evaluation.
3. To recognize the basic requirements essential to program evaluation efforts at the local, state, and national level.
4. To review selected theoretical and operational approaches for evaluating vocational education programs at these levels including:
    a. Determining data requirements
    b. Reviewing techniques for obtaining the data needed
    c. Reviewing mechanisms for interpreting and reporting the data
    d. Reviewing strategies and administrative procedures essential in developing and implementing a viable evaluation program.

General Plan of Operation

The project involved planning, conducting, and evaluating a one week institute held on the University of Arkansas campus, August 4-8, 1969. The program was planned so as to actively involve the participants in a variety of activities designed to facilitate achieving the objectives and outcomes previously stated. Emphasis was placed on presenting and reviewing procedures and techniques of evaluation which are effective in obtaining information needed for sound educational decision-making.

Considerable time was devoted to small group sessions where trainees were able to synthesize the presentations made and to develop evaluation guidelines on which a consensus of opinion was reached. Trainees also developed tentative plans of action describing evaluation procedures and activities which they planned to initiate and/or improve upon returning to their respective work assignments.

One hundred participants were selected from among the applicants, ninety-two of whom attended and participated in the institute.

II. METHODS AND PROCEDURES

Nomination and Selection of Participants

Soon after notification that the institute proposal had been approved and was to be funded, a letter explaining the purpose and objectives of the institute and a nominations form were sent to all of the State Directors for Vocational and Technical Education and to all of the Directors of State Research Coordination Units. Persons receiving the letters were asked to provide the names and addresses of up to eight persons from their state whom they felt should be given priority consideration as possible participants. Over 250 nominations were received, including at least one from every state and territory in the nation.

Additional publicity was given the institute through releases which were sent out by the U.S. Office of Education to their regional offices, to teacher training institutions, and to the Research Coordination Units.

Counting individual requests and the persons nominated by the State Directors and Research Coordination Unit Directors, approximately 350 persons were sent an application form and brochure (See Appendix A). In addition to the nominations form and letter sent in early May, three institute brochures, which contained more information about the institute program, and application forms were sent to the Directors who had not responded to the earlier request for nominations. These Directors were asked to forward the materials to persons whom they felt might be interested in applying. Brochures and forms were also sent to persons who had recently attended two other conferences dealing with evaluation.

The brochure provided interested persons with information on the purpose of the institute, a list of the primary objectives, the major topics to be considered and the general procedures to be used in conducting the institute. A list of the institute staff and consultants as well as information on participant selection, travel and accommodations was also provided.

To qualify as participants, applicants had to be state directors or supervisors of vocational education, members of state advisory councils, assistant superintendents of city schools, directors of city vocational education programs, directors of area vocational schools, or otherwise responsible for evaluating vocational education programs. The following four criteria were the major factors considered in selecting the participants:

1. Present and future evaluation responsibilities. First consideration was given to those applicants who had a

major responsibility for improving or establishing an evaluation program at home base.

2. Past evaluation activities and experience. An effort was made to give special consideration to those who could contribute to the institute because of their previous experience in evaluation.

3. The purpose given by the applicant for wanting to attend the institute. This information was used in an attempt to determine the degree of interest and desire for working in evaluation.

4. Geographic location. Selection was initially made so as to include at least one qualified participant, where the number and quality of applications allowed it, from every state and territory in the country.

Using the above criteria all applications were carefully reviewed by a committee consisting of the institute director, associate director, and a representative from the Region VII U.S. Office of Education. All qualified applicants from the approximately 175 applications received were rank ordered on a state-by-state basis by each member of the committee. The two highest ranked applicants from each state having two or more qualified applicants were selected as part of the quota of 100 trainees. Since there were not two applicants from every state, additional selections were made from the states having a large number of qualified applicants.

Letters of notification and a pre-registration form were mailed along with information on the University of Arkansas and the City of Fayetteville to the 100 acceptees. Letters notifying the other applicants of their alternate status were also sent. Several of the individuals who were initially accepted canceled out prior to the start of the institute. As many as possible were replaced with the alternates available.

A list of the ninty-two participants giving their name, professional title, and office address is contained in Appendix B. Also included in Appendix B is a list of the institute consultants and supporting staff members from the University of Arkansas.

Planning the Institute

A program planning committee was organized and convened in late May to assist with final plans for the institute. Although the institute proposal contained the general objectives, content topics, procedures to be used, and a list of potential consultants, considerable work remained. During the one day meeting the planning committee helped modify and delimit the original objectives, refine the content, sequence the topics, determine time allotments, and finalize the daily schedule. Recommendations were also made on the best methods for presentation of topics and on how to organize the small group discussions.

The planning committee consisted of eight persons including the institute director, associate director, a representative from the Ohio Center for Vocational and Technical Education, a representative from the North Carolina Center for Occupational Education, a representative from the U.S. Office of Education, and three other consultants representing local, state, and national levels of evaluation. See Appendix C for a speciman of the institute program and a list of the program planning committee members.

Another aspect of planning and preparing for the institute included the purchase of selected references and the solicitation of free evaluation materials. A list of U.S. Office of Education funded projects related to evaluation provided one valuable source of reference materials. Letters were also sent to the State Directors of Vocational Education and the Research Coordination Unit Directors who responded to the request for nominees asking them to provide one or more complimentary copies of as many useful references on evaluation as they had available. Materials were received from approximately twenty states as a result of these requests. The Arkansas Research Coordination Unit also cooperated by making available all of their evaluation related materials including a considerable number of microfiche.

Conducting the Institute

A wide variety of activities were used to enrich the understandings and experiences of the participants. Included were formal lectures, informal talks, a symposium, large and small group discussions, reaction and questioning panels, small task force assignments and reports, and individual assignments. Participants were assigned using their preference to one of eight small groups, each of which concentrated on one of the following areas of concern to evaluation:

a. State directed evaluation of statewide programs
b. State directed evaluation of local programs
c. State assisted evaluation of local programs
d. Locally directed evaluation of local programs

Each consultant prepared a formal paper in advance which was duplicated and made available to all participants immediately following its presentation. Most consultants were in attendance for at least three days and some were present all week. In addition to their formal presentations the consultants were available as resource persons to the small groups and for individual consultation.

At the close of each day, a short meeting of the institute staff, consultants, group leaders and recorders was held to obtain feedback, review the next day's schedule, and to make any changes deemed desirable. See Appendix C for a speciman of the institute program which outlines the specific topics presented and identifies the individuals who presented them.

The facilities of the new Graduate Education building were used for all the formal sessions and small group meetings. All of the participants and most of the consultants were housed in a modern campus dormitory. The two informal sessions were held in the dining area of the dormitory. The reference materials collected and a comprehensive list of them were available three evenings of the week in a room adjacent to the dormitory lounge.

Introduction, Welcome, and Orientation

The institute got underway on Monday morning with registration, at which time the trainees were provided with identification tags, a list of their fellow trainees, a copy of the institute program, and an assortment of materials about the University of Arkansas and the Fayetteville area.

A formal welcome to the University was given by Dr. Henry H. Kronenberg, Dean of the College of Education. He spoke briefly concerning the importance of evaluating not only vocational but all educational programs.

The institute director explained the purpose of the institute, reviewed the objectives established for the week long program, and discussed the anticipated outcomes. A summary of the various states represented and information on the positions held by the participants was given. The associate director covered logistical and other operational procedures. On the first evening an outdoor social with light refreshments provided an opportunity for trainees and staff to become better acquainted.

Abstracts of Presentations

The next portion of this section includes an abstract, prepared by the institute staff, of each of the major presentations.

ABSTRACTS OF PRESENTATIONS

THE ABSTRACTS IN THIS REPORT WERE DEVELOPED BY THE PROJECT STAFF FROM THE FORMAL PAPERS PRESENTED. FOR A COMPLETE TEXT OF EACH PRESENTATION, SEE APPENDIX F.

THE ROLE OF EVALUATION IN THE DECISION-MAKING PROCESS

John K. Coster *

Robert L. Morgan

The chain of events initiated by the report of the Panel of Consultants on Vocational Education in 1963, which led to the enactment of the Vocational Education Act of 1963 and culminated in the enactment of the Vocational Education Amendments of 1968, has had a profound influence on the Office of the State Director of Vocational Education. These events have established this position as one of educational statesmanship. Not only have the decision-making and managerial aspects of this position been increased in geometric proportions, but also the responsibilities for changing programs in accord with changing goals has presented a difficult task. Not the least of these is program planning and evaluation. Inputs must be provided into the decision-making process, and accountability for funds dictates that the decision-maker must have access to a highly qualified staff, the need for which was not recognized a decade ago.

National goals may be augmented or modified by state and local goals. However, acceptance of federal funds which are directed toward broad national goals is tantamount to accepting the goals which are expressed in the legislative mandates and supporting documents. Objectives, then, are specified in light of the national goals, modified by the state goals. The specification of objectives is the responsibility of the decision-maker. Resources are allocated to maximize the attainment of the objectives. The resource allocation refers to the technology of education, that is, to the combination of human resources and hardware and software, as well as facilities, which are essential to the attainment of objectives. Objectives are assumed to be hierarchial in nature, that is, they can be ordered in a hierarchy ranging from the most significant to the least significant objective in light of goals. Outcomes are defined in terms of the extent to which the objectives have been attained. The evaluation process is directed toward determining the degree of congruence between the objectives and the actual outcomes. The evaluation constitutes an input into the decision-making process. The decision-making process functions in terms of specifying the objectives and allocating the resources. If the discrepancy between objectives and actual outcomes is high, then the resource allocation system must be reexamined and decisions made regarding how these resources can be reapplied to insure the attainment of the objectives.

Evaluation must be considered as a high risk activity. The model that has been presented, for example, is a conceptual, logical model

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* Dr. Coster is Director of the Center for Occupational Education and Mr. Morgan is a Graduate Research Assistant in Psychology at the Center for Occupational Education, North Carolina State University at Raleigh.

which requires considerable work for its implementation. Yet it does provide a way of examining the complex of activities which are involved in program planning and evaluation; it demonstrates a position of the decision-maker and program manager within the model, and it indicates in broad terms the information that must be provided by the program evaluator to the decision-maker if appropriate alternatives are to be selected, objectives attained, and goals realized. The decade of the 60's has witnessed a phenomenal advance in educational technology. The management of the technology in terms of applying resources to attain objectives and realize goals must advance with the technology. The head of the program must be a rational man who can make decisions that will maximize both the probability of success and the utility of attaining objectives. The role of evaluation in the decision-making process is to design, direct, analyze, and report the necessary data on which decisions may be made. Thus evaluation is not merely essential, but absolutely mandatory as a key element in progress and goal realization.

THE SCOPE AND OBJECTIVES OF VOCATIONAL EDUCATION AND THEIR RELATIONSHIP TO EVALUATION

Edwin Crawford*

The Scope and Objectives of Vocational Education

The Vocational Education Amendments of 1968 contain a Congressional mandate for vocational education to redirect, expand, and reform its scope and objectives.

A. The 1968 Amendments reinforce the Act of 1963 with respect to requiring vocational education to redirect its efforts to serve the needs of the people as individuals, instead of merely providing for the training in certain occupational categories to meet manpower requirements.

B. The increased funding and program authorizations contained in the Amendments broaden the areas in which vocational training may be offered and increase and specify additional people who may be served.

C. Set-asides for the disadvantaged, the handicapped and post-secondary education, plus the separate authorizations for special programs, reemphasize major Congressional priorities and concerns regarding vocational education.

D. New and expanded involvement of the private sector in every phase of the educational process is another expression of Congressional emphasis.

E. Vocational educators are being asked to develop a planning, programming and evaluation system that will ensure that Federal funds are being spent in the most effective and efficient manner possible. Accountability is no longer implied; it is now required.

Relationship of Program Objectives to Evaluation

A. The main purpose of vocational education evaluation, as is the case in any evaluation, is to measure the effectiveness and efficiency of vocational education programs, services, and activities in terms of prescribed objectives and criteria.

B. Evaluation is invaluable to vocational educators from a functional viewpoint, such as assisting them to:

1. meet legislative requirements, for annual descriptive, statistical and financial reports;

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*Mr. Crawford is Senior Program Officer, Program Evaluation, Division of Vocational and Technical Education, U.S. Office of Education.

2. provide feedback for future program planning and development--to close the loop in the planning process;

3. improve management and administrative decision-making;

4. determine additional vocational education research needs;

5. suggest needed legislative changes;

6. reveal gaps in program coverage and to fulfill the unmet needs of students, business and industry, and labor;

7. discover exemplary programs, services, and activities;

8. uncover program alternatives for accomplishing prescribed objectives; and,

9. disseminate findings for the edification of all concerned with vocational education.

Conclusions

A. New legislation requires the development of comprehensive planning, programming and evaluation systems at the Federal, state, and local levels; such requirements should serve as a springboard for program development and improvement.

B. The prescribed program objectives are stated in terms of target groups and target areas to be served, thus reflecting special priorities to be emphasized.

C. The implications of the Congressional mandate for evaluation are clear, many and, in some instances, complex. The effectiveness of current programs and the satisfaction of individual students require that we learn and implement those procedures and techniques that will most efficiently aid the planning and programming process for the attainment of local, state, and National objectives.

D. The various levels of government should share the same concerns and priorities regarding planning and evaluation, for their cooperative efforts are vital to the development and implementation of valid, effective programs of vocational education to meet the needs, interests, and abilities of all the Nation's youth and adults.

A SYSTEM FOR STATE EVALUATION OF VOCATIONAL EDUCATION

Harold Starr*

State vocational education agencies have used process evaluation results to justify the existence of programs, state expenditures to local programs, and state agency budgetary requests for personnel and financing. One reason that state vocational education agencies may require an alternative evaluation strategy is related to the credibility of process-oriented results for justifying such budgetary requests. Decisions regarding resource allocation by policy-making bodies are being based with increasing frequency on evidences of program efficiency, program effectiveness, program relevance to changing social and economic conditions, and the degree to which agency programmatic direction reflect community, state, and federal interests and concerns. To this end, the demand of policy-making bodies has been for more information in terms of programmatic effectiveness and the extent to which state agency efforts relate to larger social concerns. Since process evaluation of vocational program efforts fail to provide evidences related to either of these concerns, it cannot be used as a viable strategy for conducting state vocational education program evaluation.

The project staff concluded that an evaluation methodology which has greater payoff for state vocational education agency program planners in terms of program planning and accountability purposes would be a methodology which is consistant with a systems approach to planning, contains process elements, but is oriented primarily toward product or outcome measures. Such a systems approach to evaluation methodology would require that: (1) the evaluation problem be defined in terms of its purposes and expected outcomes; (2) a measurement system would be formulated from the types of decision requirements which are logically derived from the purposes of the evaluation; (3) proper feedback or quality control mechanism would be provided to continously assess the effectiveness and efficiency of the information system in providing significant decision-making data; (4) an interpretive system would be formulated which could analyze and provide information to decision makers in a format which would facilitate decision-making; and (5) since the evaluation system is only one part of a total program planning system, careful attention would be directed to assuring that the evaluation system could be articulated with other components of a systematic program planning process.

The systems approach was designed and tested in two phases: (1) May of 1967 to November of 1968, and (2) November of 1968 to September of 1969. In September of 1969, the revised approach will be tested in four states. The project staff will then work with these cooperating states in assessing the program planning procedures which are designed to assist the state agencies in developing annual and long-range projects of their programmatic activities on the basis of evaluation results. Following the field testing of instruments and procedures, a finalized evaluation system will be produced at The Center and the materials will be disseminated to potential users.

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STATE DIRECTED EVALUATION OF LOCAL PROGRAMS
THE PROCESS

Robert A. Mullen*

In 1966 the North Carolina Department of Public Instruction initiated a state directed evaluation of local programs of vocational education. The major purpose of this evaluation was to improve programs of vocational education in existence and to insure the highest possible quality for programs that were to be implemented in light of future available resources.

The program was set up as a five-year project with 20 percent of the local administrative units being evaluated each year. The first two years of the project were designed as pilot project years in which methods and techniques would be developed and tried out.

The questions needing answers were:

1. Are vocational programs in local situations located according to occupational opportunities, needs of students and with an eye toward comprehensiveness of the school in which it is located?
2. Are programs of vocational education being conducted with adequate equipment, materials, including audiovisuals, and are they located in adequate facilities?
3. Are students receiving adequate guidance and counseling at the proper times?
4. Are students being given assistance where applicable in finding jobs once their training program has been completed?
5. Is instruction timely, up to date, and transferable to related occupations or to continuing education opportunities and are students receiving a broad outlook toward occupations through the application of the cluster concept?
6. Are local school administrators planning vocational education offerings to insure that programs are in keeping with current and projected labor market demands?
7. Are programs within the individual school setting carrying on a constant program of evaluation involving student reactions, teacher reactions, employer reactions, parent reactions, reactions of the local school board members and other people where applicable?
8. Is the type of supervision being provided for programs adequate in terms of program improvement?
9. Are vocational teachers utilizing a variety of teaching methods and techniques and, in addition, are vocational teachers pursuing a program of professional development involving the

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improvement of their teaching methods as well as updating and upgrading themselves in subject matter areas?

10. Are advisory committees being utilized effectively?

A state staff desiring to initiate an evaluation of local programs of vocational education must take into consideration first, how it will gain the necessary commitment from the members of the state staff to be involved in the evaluation and then, the necessary commitment from local education agency personnel including superintendents, principals of schools, counselors, teachers and coordinators. The second consideration or step is to determine the purpose the evaluation is to serve. Broadly stated the purposes should be to improve each program, with participants at each level, being fully aware of the uses to be made of the findings.

With the above considerations in mind the following 22 objectives were determined by a committee representative of all vocational areas:

1. To determine the extent to which administration and supervision of vocational education is adequate, both at the state and local levels. (General)
2. To determine the extent and effectiveness of program projection, planning, and evaluation at the state level. (General and Specific)
3. To determine the adequacy of state and local involvement in local program planning and evaluation for vocational education. (General and Specific)
4. To determine the extent to which vocational education resources are allocated according to occupational needs, both useful and gainful. (General)
5. To determine the extent to which vocational offerings are meeting stated objectives. (Specific)
6. To determine the level of staff (teachers, coordinators, counselors) preparation and the extent to which these individuals are engaged in continuous and long-range programs of professional development. (General and Specific)
7. To determine the extent to which vocational teachers plan and follow through with sufficient and effective teaching practices and experiences suited to student needs. (Specific)
8. To determine the extent to which appropriate facilities, equipment, and teaching materials and supplies are available and are used for the various programs. (Specific)
9. To determine the extent to which vocational teachers contribute to career planning of students through program interpretation and instructional activities. (Specific)
10. To determine the extent to which vocational offerings are selected by students on a sound career-planning basis. (Specific)
11. To determine the extent to which teachers and school administrators are using experimentation, pilot programs, and innovations as a means of improving the quality of instruction. (General and Specific)
12. To determine the extent to which vocational education is a cooperative effort involving all education. (General and Specific)

13. To determine the extent to which students are entering the occupational area for which they received vocational training and are progressing on the job or continuing training. (Specific)
14. To determine the extent to which the curriculum provides for students who have special needs. (General and Specific)
15. To determine the extent to which the needs of adult farmers and homemakers are being met. (Specific)
16. To determine the extent to which vocational teachers are involved in school activities. (Specific)
17. To determine the extent to which advisory committees are used in planning new programs and improving existing programs. (Specific)
18. To determine the extent to which community resources are used in the various instructional programs of vocational education.
19. To determine the extent to which vocational teachers, counselors, coordinators, and administrators interpret the vocational education program. (General and Specific)
20. To determine the extent to which youth organizations strengthen and extend the various vocational programs. (Specific)
21. To determine the extent to which vocational teachers assume professional leadership beyond the instructional program. (Specific)
22. To determine the extent to which vocational offerings are available to students on a fee-free basis. (Specific)

It may be noted that some objectives are both general and specific, while others are only general or specific. General means it is applicable to all vocational education, while Specific applies to each subject area.

These objectives were treated within the framework of the following four basic questions:

1. What is the present status of vocational education in the State of North Carolina in each of the classrooms, shops and laboratories?
2. What ought vocational education be in the coming year?
3. What are the problem areas that exist in vocational education in local programs?
4. What will be the future course of action for local programs?

Experience in this evaluative process has indicated several desirable points to be considered for the future of the process. Among these are: the desirability of involving local personnel in inservice programs so that they might become more intimately involved in the evaluation process, gradually shifting a portion of the responsibility from the state level to the local level; that a reorganization at the state staff level take place so as to provide increased general supervision in addition to supervision by specialized areas; and, that increased emphasis be put upon working with personnel at the local level so that the result of future evaluations may play a more important role in the future of programs at the local level. Experience has also shown that the results of the evaluation are important in developing long-range plans for the future of vocational education at the local level.

PROJECT IMPROVE:
THE DEVELOPMENT OF A STATE OPERATED EVALUATION SYSTEM

Jerome Moss, Jr., Brandon B. Smith,
Frank Pratzner, David Wheeler,
and William Stock *

The title of this paper is slightly misleading. The Minnesota Research Coordinating Unit is not developing a complete system for evaluating vocational programs in the State; it is developing only a subsystem at present for studying post-secondary level programs. The kinds of questions this subsystem will seek answers for are micro-level, qualitative and diagnostic in nature. How "good", how "successful", is the automechanic curriculum in school X? How efficiently is it operating? What can be done to improve its effectiveness with minimum increase in costs? These are the kinds of questions the RCU is attempting to answer.

The subsystem will provide educational managers and program developers at the State and local levels with information useful in making investment decisions about, and in improving the quality of, specific vocational programs throughout the State. When completed, the subsystem should be readily integrated with a total management information system and be adaptable to all levels of vocational instruction.

The project is planned in three phases: (a) Phase 1 will design the overall subsystem and identify relevant variables; (b) Phase II will develop the instrumentation and the data collection and processing procedures; (c) Phase III will tryout and revise the subsystem. Phase I is now nearly complete.

Before attempting to design the subsystem, certain issues in evaluation were examined and assumptions made about them which served to create the framework within which subsystem development could proceed.

First, the subsystem should employ the "products" of specific vocational programs--former student-learner behavior--as evaluative criteria.

Second, diagnosis of instructional programs--the ability to determine how effectiveness can be improved--is an essential aspect of a subsystem directed toward assuring program quality.

Third, vocational program management decisions cannot be made without regard to costs.

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* Dr. Moss and his colleagues all are members of the Minnesota Research Coordination Unit for Vocational Education at the University of Minnesota.

Fourth, all evaluation requires comparison with some standard. This evaluation will determine the relative effectiveness and efficiency of two or more "equivalent" vocational programs.

Fifth, to make possible maximum efficiency, objectivity, and useful comparability, a subsystem designed to provide periodic program evaluation should be state-operated.

In order to develop the overall design of the evaluation subsystem within the assumed prerequisites, consideration was given to five basic questions, the first three of which are discussed in some detail.

How should vocational programs be classified so that we can make logical, useful comparisons between them, as well as provide the basis for future generalizations of results? For purposes of evaluation only programs of similar characteristics with similar students may be compared fairly.

Since purposes dictate desired outcomes and, in turn, criterion measures, what is to be assumed about the role and purposes of post-secondary vocational education? It is assumed that criterion measures, in terms of former student learner behaviors will be based upon program purposes, that is, the principal purpose of vocational education is to improve the work adjustment of the individual as measured both by worker satisfactoriness and satisfaction.

What are the educational and other factors that influence educational outcomes? That is, what is the educational production function? The general form of the production function is:

$O = f\,[P, C]$
O = Outcome measures of the program
f = Function of program characteristics (P) and constraint factors (C)
P = Program characteristic (manipulable by program developers and operators)
C = Constraint factors (not manipulable by program developers and operators)

For further elaboration upon this general production function, the reader is referred to the complete text contained in Appendix F.

What kind of cost function should be developed?

What decision criteria should be employed to determine the program in which additional funds should be invested?

When data on outcomes, program characteristics, and constraint factors become available for two or more programs, the production function can be treated as an equation susceptible to regressional analysis.

It is recognized that the relationship revealed by the type of analysis envisioned are not necessarily causal. But given the logic of the production functions, the relationships found *do* provide a reasonable basis for *assuming* a degree of causality, especially when the predictive value of the independent variable in the production function proves to be high.

The Minnesota Research Coordinating Unit is in the process of designing an evaluation subsystem which can be integrated with more complete management information systems, and which will yield evaluative and diagnostic information about the relative efficiency and effectiveness of individual program offerings.

LOCALLY DIRECTED EVALUATION OF LOCAL PROGRAMS OF VOCATIONAL EDUCATION

Harold M. Byram *

There are three general strategies for bringing about evaluations of local programs of vocational education. One strategy may be called a state initiated and/or state operated evaluation. In this type evaluation the state educational agency is generally responsible for determining objectives, developing criteria or criterion questions, and deciding on the scope and depth of data needed to answer them. The instruments are state developed and uniform for all districts.

A second strategy may be referred to as a state led evaluation of local programs. Using this approach the state agency or a university provides a program to prepare local administrators and teachers who conduct their own evaluations with the aid of staff committees and citizen advisory committees. The local leaders are given help in describing their goals and objectives, in formulating criterion questions, in developing or selecting instruments for gathering relevant data, in analyzing and interpreting the data, and in effectively involving both staff and citizens in the whole process.

The third strategy is independent local program evaluation. Here, a local district would, without previous training or consultant help, conduct its own evaluation. It would not necessarily report to any entity outside the district and might or might not conduct the study on as broad a scope as in the case of the other two strategies.

Each of the strategies has certain merits and shortcomings. A major advantage of the state led local evaluation is that it provides for a process in which those who are responsible for, and those affected by the program conduct the appraisal for themselves. It also calls for the training of local educators in the processes and procedures of evaluation by either the state agency or state universities.

Most of this presentation deals with state led local evaluations because of a strong bias toward local involvement and program planning and because of six years' experience with this strategy.

Several essential elements of local program evaluations are identified as follows:

(1) There must be a commitment by the local administration that goes beyond mere sanction or endorsement. Those who are involved in conducting a local evaluation need to be assured that they have support for their activities, that resources

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for completing them will be provided, and that serious consideration will be given to the findings and recommendations.

(2) A competent, strategically placed local leader is also essential. A director or supervisor of vocational education or similar person who has the recognition and respect of all administrators and other professional staff members is needed.
(3) The evaluation leader or chairman, and the staff committee working with him should be trained in research and evaluation procedures. These persons will need to select, modify, or develop instruments for retrieving data, to monitor the data processing, and to analyze the data collected.
(4) Another essential element is a functioning advisory committee or committees. Representatives of people affected by the program should have a voice in evaluating it. Furthermore, they represent a source of valuable information that is basic to local program planning and are more likely to accept and help implement recommendations if they have been actively involved. There may be one general advisory committee, a committee for each occupational area, or a combination of these.
(5) Because staff members will make a significant input in terms of energy and time, it is essential that they be provided time to work on the activities planned. Adequate clerical services need to be made available too.
(6) Consultant services will, in many cases, also be essential. Consultants should have an understanding of modern principles and programs of occupational education and have the specialized competencies that the local educators want.

Beyond the elements which have been categorized as essential, there are additional ones which would be designated as desirable by most people experienced in local program appraisals. The focus of the local program evaluation needs to be on outcomes. This is not to say that the input elements can be ignored, but until there can be an appraisal of the output of a program, there is really little basis for considering change in the input. The major question to be answered is: Are the results of the program commensurate with the expectations held by those responsible for and affected by the program?

Another desirable element is that the scope of the evaluation be broad. It should not be limited to programs that are reimbursable, nor to programs that have been designated as vocational. Of course, many programs will contribute more directly to occupational preparation than will others.

This system, if it can be called that, has worked in the states of Michigan, Arkansas, Minnesota, Mississippi, and Nevada where it has been tried in both area and local schools, and in schools varying in size from 2,500 to 30,000 students (K-12).

The urgency of improving local programs of vocational and technical education through evaluation and program planning is too great to be left to chance. If the opportunity which local educators and citizens now have is not taken advantage of, there is a strong possibility that it may pass out of their hands.

VIEWPOINTS OF A MEMBER OF THE NATIONAL ADVISORY COUNCIL FOR VOCATIONAL EDUCATION

Jack Michie *

A careful look at the teacher education programs and credentialing systems within the states would be a great starting point for an evaluation. Too often we avoid the real question as we attempt to evaluate: "What are we doing for the kids?" That's very simply stated and very real. That's where the whole problem lies.

What to evaluate? Evaluate the scope and the goals of vocational education, the organization and administration of vocational education and we certainly have to look at the program results and what happens. What happens to people after they complete a program? One day Congress is going to ask how we spent our money and what we did for people.

Whether a new area of vocational education is being considered or an existing program is being evaluated, administrators must heed the expectations of the community. Three very salient questions should be asked. What are the expectations of business and industry in the community? What are the expectations of the advisory councils and committees? What are the expectations of the students?

The National Advisory Council is committed in these ways:

1. Seeing to it that career planning is provided for each citizen.
2. Assisting persons to develop an interest in vocations and pursue occupational exploration.
3. Allowing the student to participate in varied work experience so he can identify and accept for himself the dignity of occupational choice.
4. The strengthening of occupational choice and evaluating the relevance of the total occupational process.
5. The initiation, encouragement, and support of cooperative effort among all elements or components of the educational system in the nation.
6. The elimination of artificial barriers to success in personnel development, and encouragement of flexibility in facilitating and capitalizing upon the differences and strengths which individuals possess.
7. The encouragement and support for creative and innovative programs, and a continuous pursuit of financial support for vocational education, and a development of a national plan for vocational education to prepare people for work, and a monitoring system which will provide for effective evaluation.

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* Dr. Michie is a member of the National Advisory Council for Vocational Education and at the time of this presentation was Dean of Institutional Planning, Southwestern College, Chula Vista, California.

If education is to be relevant, if schools are to be real, if our obligations to young people are to be fulfilled, and if they are to be given a future better than the past, then we need to reconstitute our total educational system so that vocational education becomes education. There is no other kind.

FOLLOW-UP PROCEDURES FOR VOCATIONAL EDUCATION STUDENTS

Richard Whinfield *

The follow-up is merely a technique for gathering data and must be properly related to the grand design for any evaluation project. "A follow-up study is an attempt to accumulate relevant data from or about a group (or groups) of individuals after they have had certain similar or comparable experiences or who have certain similar or comparable characteristics." Although the usual conception of a follow-up implies the use of a mailed questionnaire, there are many kinds of data about people which can be collected by other means.

The decision to conduct a follow-up should result from an analysis of the problem to be solved or the questions to be answered. If the best way to get the data needed is through use of the follow-up technique, then it should be employed.

Follow-ups may serve one or more of three major purposes depending on the design and intent of the investigator. The first is to obtain descriptive data about what has happened to people, which may be of some usefulness in predicting with limited accuracy, what may happen to subsequent similar groups. This approach has limited evaluation potential for it requires arbitrary judgment to conclude whether the description is good or bad.

A second purpose of a follow-up study may be to elicit evaluative responses of former students about their educational experiences. The problem here is that the respondees have a limited knowledge of alternatives, and each respondee speaks out of a different frame of reference. As an evaluation or advisory device this approach has the most usefulness when the occasional consensus is found.

The most useful purpose of a follow-up is a comparative one. There are numerous comparisons which can be made between groups such as dropouts, academic students, students from different schools, students from other states, and students taking other courses.

There are four major considerations or components of any follow-up study. The first concern deals with the persons to be included in the study. An accurate definition of the group or groups to be studied is essential if the study is to be valid. A decision must also be made after considering time, cost, and other factors whether to study the whole universe or to select a sample.

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A second major component is the data gathering instrument itself. If the wrong data is obtained, the study is of little value. The development of a good questionnaire is a very difficult process unless you are seeking only minimal information. Forced response versus open-ended questions is one of many considerations needing careful attention when developing the instrument. Forced responses are easier for respondees to handle and lend themselves to easy statistical treatment, but they are dangerous in that they may not provide for all the alternative answers. The design or format of the questionnaire, including size and legibility are factors influencing the response rate. It is recommended that the instrument be pre-tested to determine whether or not the questions are understood, to improve the response rate, and to increase the reliability of the questionnaire.

The third factor of primary concern is the response rate. The response rate is directly related to the sources of the request for completing the questionnaire. The wording, length, and design of the request letter is also of significance. Confidentialness should be assured and an honest, straight-forward appeal made. A rapid mailing sequence of approximately seven day intervals appears to give better results than mailing with intervals of two or three weeks.

The fourth major component of concern in conducting a follow-up involves data handling and treatment. A variety of techniques are used in coding. The actual coding of questionnaires frequently requires some specialization and close supervision. The goal to strive for is consistency in handling each problem. The general rule is to code everything in raw form and then transform and categorize it by machine. Treatment of data should be determined in a general way before you start collecting data.

In conclusion, two general statements:

1. There is no substitute for good data. While it is perfectly possible to treat the accumulation of data casually, without any reader of the final report being aware of the shortcoming, the integrity of a researcher demands that he do all in his power to get the best data possible.
2. To assume this is an easy process is a grievous error. The attention to careful planning, to thoughtful and conscientious control will eliminate many frustrations which come from treating and reporting data.

ARKANSAS VOCATIONAL STUDENT INFORMATION AND FOLLOW-UP SYSTEM

William C. Arnwine *

The purpose of the system is to collect relevant data on students as they enter educational institutions, as they exit, and periodically after they have left school. The data gathering system is designed to provide school administrators with the information they need for making sound decisions regarding program improvement and program expansion. Analyses of the data will, among other things, serve to measure the effectiveness of instruction, curriculum, and student personnel services.

The Vocational Student Information and Follow-Up System designed specifically for post-secondary programs, is concerned with how well the students are being prepared for employment. It provides for the collection of data needed to answer several important questions:

1. Are the students receiving an education which permits them to start work with competence and assurance?
2. Are the students well received by their employers as evidenced by a higher rate of pay and rapid promotion?
3. What are the students' opinions and attitudes toward the type of training they received?
4. Is the training program supplying adequate numbers of skilled workers for the businesses and industry in the community?

To be effective, an effort must be made to involve and inform all staff, as well as students, about the system and its potential for program improvement. Proper conditioning and positive attitudes on the part of the students are particularly important as they will affect the students cooperation in accurately completing forms while they are in school and in returning future mailed questionnaires.

The information and follow-up system is composed of three important phases: Phase I is concerned with the collection of data; Phase II with the analysis of the data; and Phase III with decision-making and converting the information into action.

Phase I, data collection, involves the use of three forms. The first form or enrollment form is completed about two weeks after the student enters school and identifies the student with respect to name, age, sex, and the type of training desired. The second form or exit form is completed by students about a week before graduation or whenever they exit for any other reason. This form provides for updating some of the data gathered on the entry form, provides information on program completion and job status, as well as providing for

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* Dr. Arnwine was employed as a Project Consultant by the Arkansas Research Coordination Unit for Occupational Education, Department of Vocational Education, University of Arkansas.

some evaluative responses concerning several factors related to the student's instructional program. The third form or follow-up form is partially completed by computer, which fills in the school name and the student's name and address as he entered it on his exit form, before being mailed to the former student. After receiving it, the former student answers pertinent questions concerning his current status and training program. The follow-up form is pre-addressed and stamped so that it may be easily folded, stapled, and mailed to the Vocational Research Center within the suggested ten-day period.

Phase II, data analysis, is computerized to facilitate data handling and interpretation into meaningful reports. Several standard reports will be generated not only for the purpose of measuring the effectiveness of present-day instruction, curriculum, and student personnel services, but also to lay a foundation for planning future programs to better meet the needs of students and the community. A variety of special reports could also be produced to provide greater insight into specific programs or problem areas. The reports can be as detailed as needed or in summary form. They can be run to satisfy the data needs of administrators at all levels and the data needs of instructors in optimizing their effectiveness and efficiency relative to their job responsibilities and institutional objectives.

Phase III or the action phase, is a crucial one in terms of improving vocational-technical education programs. Administrators and teachers are key personnel in this phase as only they can implement the recommendations that result from this information system. Implementation should take the form of increased attention to constantly reviewing and updating curricular offerings and course content to insure the type of training demanded by business and industry and by our ever-changing technological society.

The system provides a medium through which educational programs can become more efficient as well as more responsive to both student and manpower needs.

VIEWS FROM THE CHAIRMAN OF A STATE VOCATIONAL ADVISORY COUNCIL

Caroline E. Hughes *

State advisory councils for vocational and technical education are reasonably new, resulting from the legislative Amendments of 1968, where their formation, support and duties were clearly defined. These councils are formed by a group of previously unacquainted people, with varied backgrounds of experience, but mutual desire in education, social and economic progress. The diversified background of membership provides a knowledgable and formidable resource for the evaluation of our educational process.

Advisory councils are organized to be working bodies, with authority for research and recommendation to state departments with whom the responsibility for implementation rests.

Oklahoma Council members have talked informally and frequently regarding personnel requirements for efficient and expedient Council operation, and attempted to define specific directions which an advisory group may prudently take. A general philosophy is evolving. Staff personnel is being thoughtfully considered, pending the crystallization of Council direction and budgetary appropriations.

The Advisory Council is cognizant of an extensive and growing vocational and technical program under the excellent professional guidance of the State Department. It seeks to cooperate with the Department in an expanding program, yet maintain an objectivity to insure maximum advisory effectiveness.

The Council shares the views of a representative for Western Electric in Oklahoma City who gave several suggestions for improving the present educational system in order to prepare students for entry into the world of work. His suggestions included:

1. Prepare the children so that they can at least read a newspaper and organize sequences of numbers.
2. Develop in the children positive attitudes toward work. People who don't want to work, won't show up for work, won't notify employers, do not possess a sense of responsibility.
3. Schools must stop promoting the individual and promote group activities. In business and industry one must work for the good of the group and not the individual.
4. Information received on personal recommendations is most unreliable. Recommendations from professional people tend

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* Mrs. Hughes is Chairman of the Oklahoma State Vocational Advisory Council.

> to be the most unrealistic of all. Students have a very difficult time in applying for a job. They don't know how. No one has ever bothered to inform the student where and how to look for a job or how to apply for a job. The majority of the educators consider that all the graduating seniors will enter college, therefore, their prime concern is how to select a college.

Though the responsibilities of advisory councils are statewide, they share in local and national concerns. They represent a valuable resource for the state departments of vocational education.

COST-EFFECTIVENESS ANALYSIS AS A METHOD FOR THE EVALUATION OF VOCATIONAL AND TECHNICAL EDUCATION

Jacob J. Kaufman *

It is the purpose of this paper to discuss cost-benefit analysis in terms of (1) its logic and meaning; (2) some of the misconceptions which prevail concerning this method of evaluation; (3) some of the problems and limitations of this method; and (4) the conclusions of a study, conducted by the Institute for Research on Human Resources at The Pennsylvania State University, which attempted to determine whether or not there is pay-off from an investment in vocational and technical education.

The fact is that there is a tendency on the part of some educators to talk simply in terms of the "needs" of education. Their position is simple: the governmental agency should raise whatever funds are necessary to meet these "needs". On the other hand, there are some politicians who assert that there is a fixed sum of money available for educators to spend on education. The fact is that one should not talk about education in terms of cost or needs alone. No cost can be justified without a reference to pay-off. And the satisfaction of any need cannot be justified without reference to cost.

But what control do we have over public education? What incentives are there for the public educator to keep his cost down? What evidence is there that public education is being provided efficiently? What evidence is there that the objectives are being achieved? It is being suggested that these are legitimate questions to ask and that there appears to be only one appropriate method for arriving at the answer, that of cost-benefit analysis.

One aspect of cost-benefit analysis which should be stressed is that it is basically a "way of thinking." It tends to force an administrator to think through his objectives. Too frequently they are expressed too broadly and do not reflect the "real" objectives. Second, it forces an administrator to concentrate on costs as well as objectives. Third, it forces an administrator to think in terms of alternatives.

The six misconceptions of cost-benefit analysis are: (1) it is merely a subterfuge for seeking to conduct education on a "least cost" basis, (2) benefit is measured only in dollar terms, (3) there are some things that are not quantifiable, (4) the cost-benefit technique has not been fully developed, (5) there is a misconception that the

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cost-benefit analyst substitutes his judgment for that of the decision-maker, and (6) it is sometimes argued that cost-benefit analysis tends to ignore political considerations.

A major distinction must be made between evaluation of individuals and evaluation of processes. Most educators still tend to think of evaluation only in terms of testing, or in terms of discriminating among individual students for administrative or instructional purposes. The goal is not the assessment of the individual but rather the assessment of the progress of all students within a program and the determination of reasons for all the relative success of various aspects of this program.

The definitional problem centers around a distinction between measurement and evaluation. The distinction between the two is important. Measurement implies only quantity, while evaluation implies quantity plus quality. Measurement is a necessary part of evaluation, but evaluation requires both pre-measurement and post-measurement considerations. Before measurement commences, evaluation requires the formulation of a basic educational philosophy (and its attendant goals) and the statement of specific behavioral objectives to be measured. After measurement is completed, evaluation requires (1) the analysis of measured quantities in terms of the attainment of objectives and progress toward goals, (2) an estimate of the value of existing programs in determining this progress and (3) an estimate of the costs involved in conducting these programs.

Evaluation Procedures

The evaluation of the institute was planned in an effort to determine the degree of success, or failure of the institute. Both objective measures and subjective measures were used.

At the close of the institute, participant satisfaction with the total training program was assessed by using a Likert-type instrument adapted from a form developed by J. Eugene Weldon. A copy of the form used is located in Appendix D.

Another aspect of the evaluation scheme involved having each participant or group of participants develop a project relevant to his or their area of responsibility. A summary of the types of plans developed is provided in the next chapter of this report.

The third measure of the effectiveness of the institute was a follow-up form which was sent to all participants approximately eight months after the close of the institute. Participants were asked to indicate what new evaluation activities they have initiated and what activities they have modified. Questions were also asked to determine the number of personnel trained by persons attending the institute and to determine the extent to which plans of action developed were carried out. See Appendix D for a copy of the follow-up instrument.

III. EVALUATION

The evaluation scheme consisted of three types of assessments. They include: (1) a measure of participant satisfaction with the total institute program, (2) a summary of the immediate outcomes of the institute in terms of the plans of action which were developed during the week of the institute, and (3) a follow-up survey of all participants approximately eight months after the institute to determine the evaluation activities of the participants since the institute. These procedures are discussed in greater detail in the remainder of this chapter and copies of the two forms used are presented in Appendix D.

While most of the evidence presented was gathered specifically for the purpose of evaluating the institute, the authors would like to take this opportunity to report that there were many favorable reactions from the trainees during the institute and in several letters received by the staff since the institute.

Satisfaction With Total Program

At the close of the institute, each participant was asked to anonymously register his degree of satisfaction with the total institute program by completing an Institute Evaluation Scale consisting of two parts. Of the 92 participants, 79 submitted evaluation forms. Part I consisted of thirty-five statements about the institute, and Part II consisted of two questions and two statements asking participants to indicate their feeling about various aspects of the program. The thirty-five statements, of which eighteen were couched in negative terms and seventeen in a positive format, were reacted to using a five-point Likert type scale. These statements and a summary of the participants' responses to them are presented in Table I.

Rather than present the data derived from the rating scale in detail the reader is encouraged to study the distribution of responses as well as the mean for each of the statements. The following discussion therefore includes only a few of the highlights.

The participants showed agreement with all the positive statements and disagreement with all but one of the negative statements. The reaction to statement 14, "The information presented was too theoretical," although positive was only slightly so. The mean values indicate that participants agreed most with statements 1, 7, 15, 16, 23, 24, 30, and 32; and disagreed most with statements 6, 10, 22, and 31. The general tendency for participants to agree with the positive evaluative statements and their tendency with one exception to disagree with the negative statements, suggests a fairly high degree of satisfaction with the total program.

The first question in Part II of the Institute Evaluation Scale asked the participants to indicate the two most important ways they planned to apply the outcomes obtained from attending the institute. A summary of the responses to this question is presented in Table II.

TABLE I

MEAN VALUES AND FREQUENCY DISTRIBUTION FOR PARTICIPANTS' EVALUATION OF THE INSTITUTE

	Frequency Distribution					
	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)	Mean
Statements						
1. The objectives of this institute were clear to me . . .	17	48	5	6	3	3.89
2. Specific purposes made it easy to work efficiently	3	45	11	16	4	3.34
3. The participants accepted the purposes of this program	7	46	12	8	6	3.51
4. The purposes of this institute were not realistic	6	13	3	42	15	2.41
5. The objectives of this program were not the same as my objectives	3	23	6	36	11	2.63
6. I didn't learn anything new . .	2	5	2	35	35	1.78
7. The material presented was valuable to me	18	45	7	5	4	3.86
8. I could have learned as much by reading a book	4	5	4	43	23	2.04
9. Possible solutions to my problems were considered	8	46	10	10	5	3.53
10. The information presented was too elementary	0	5	7	44	23	1.92
11. The speakers really knew their subjects	8	48	13	8	2	3.66
12. The discussion leaders were not well prepared	12	16	6	34	11	2.80

TABLE I (cont)

	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)	Mean
	Frequency Distribution					
13. I was stimulated to think objectively about the topics presented	7	53	10	9	0	3.73
14. The information presented was too theoretical	14	26	6	28	5	3.20
15. New acquaintances were made which will help in my future work	37	40	2	0	0	4.44
16. We worked well together as a group	25	40	7	7	0	4.05
17. We did not relate theory to practice.	2	19	13	39	6	2.65
18. The sessions followed a logical pattern	12	49	4	13	1	3.73
19. The schedule was too fixed. .	11	20	6	40	2	2.97
20. The group discussions were excellent	11	42	13	12	1	3.63
21. There was very little time for informal conversation. . . .	7	15	8	39	10	2.54
22. I did not have an opportunity to express my ideas	0	5	5	52	17	1.97
23. My time was well spent. . .	15	46	13	1	4	3.85
24. I really felt a part of this group.	10	58	9	1	1	3.95
25. The program met my expectations	8	45	11	11	11	3.59

TABLE I (cont)

		Frequency Distribution					
		Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)	Means
26.	I have no guide for future action	1	5	5	50	18	2.00
27.	Too much time was devoted to trivial matters	1	8	12	43	15	2.20
28.	The information presented was too advanced.	3	14	5	44	13	2.37
29.	The content presented was not applicable to occupational programs	3	8	9	46	13	2.27
30.	Institutes of this nature should be offered again in future years	32	29	13	3	2	4.09
31.	Institutes such as this will contribute little to vocational education..	4	2	7	33	33	1.87
32.	The information presented will be useful to me as a vocational educator	24	43	9	2	1	4.10
33.	The references available to participants were not appropriate	1	5	13	45	15	2.14
34.	The facilities for the institute were inadequate	2	13	7	36	21	2.23
35.	The dormitory and food service was excellent	19	30	4	20	6	3.46

TABLE II

SUMMARY OF RESPONSES OF FIFTY-SIX PARTICIPANTS TO QUESTION ON THE TWO MOST IMPORTANT WAYS THEY PLANNED TO APPLY THE OUTCOMES OBTAINED FROM THE INSTITUTE *

Outcome	No. of Responses	% of Total Responses
Establishing an evaluation program for my state	22	19.6
Increased ability to advise others in planning occupational programs	20	17.9
Establishing an evaluation program for my school or institution	15	13.4
Planning of vocational programs	14	12.5
Improvement of teaching or supervision	10	8.9
Administration of occupational programs	9	8.0
Use in present research studies	8	7.1
Writing an article or other publication on this topic	2	1.8
Increased knowledge of research in general	2	1.8
Preparation of curriculum materials	2	1.8
Preparation of a research project	2	1.8
Other	6	5.4

* Twenty-three participants either failed to respond to this question or their responses were unusable.

Participant responses shown in Table II indicate they were expecting to use the knowledges gained in a wide variety of ways. The major outcomes planned were to establish an evaluation program for their state, school, or other institution, and to become involved in either the planning of vocational programs or advising others on the planning of occupational programs. The establishment of an evaluation plan or scheme for use at home base was one of the planned outcomes of the institute. It is logical that such evaluation programs would in turn be used to improve vocational programs or to advise others on the improvement of such programs.

The second item in Part II asked the participants to indicate areas or topics which they felt should be included in future institutes on evaluation. Most of the topics listed had been covered to some extent during the week but responses to this item indicates some were not covered in sufficient depth. Nine topics which were suggested by three or more persons are listed below in descending order of their frequency:

Review more completed research projects which have utilized a variety of proven practical evaluation techniques
More attention to preparing and using measurable behavioral objectives
More on the development and selection of evaluation instruments
More on cost-benefit (effectiveness) procedures
Time to prepare a step-by-step approach to evaluation
More on interpreting data and formulating recommendations
Evaluation of specific programs, i.e., disadvantaged, counseling, etc.
Techniques for dissemination and implementation of findings
More practical application of topics presented

The third item in Part II requested the trainees to write out any "suggestions which would provide direction for planning and improving future institutes." Due to the open-ended nature of the question, a large variety of responses, some of which conflicted with each other, were obtained. The suggestions offered by three or more persons, with the most frequent listed first, were as follows:

More time should be devoted to small group work
More detailed instructions and training should be given small group leaders and recorders
Arrange for more recreational opportunities
Don't schedule the program so tightly
Visit a model vocational program to serve as a framework for relating all presentations
Provide more opportunity for dialogue between presenters and participants
Plan more organized activities for dependents
Very well planned and executed

The fourth and final item in Part II of the Institute Evaluation Scale asked, "What comments, positive or negative, can you make which will assist us in evaluating the institute?" Again many comments both positive and negative were received. Seven participants interpreted the question as asking what procedure or procedures could be used to further evaluate the institute. All seven suggested a procedure which had already been planned - that of conducting a follow-up within one year to see if the participants have modified or initiated new evaluation procedures as a result of attending the institute. Some of the negative comments made by two or more participants included:

- Beginners were lost and frustrated by too much theory
- More opportunities needed for participants to get acquainted
- Much information presented was of little practical value
- Better travel arrangements are needed
- Select group leaders who have more experience
- More time was needed for individual and small group work
- Identify participants earlier and supply with advance information about program
- Have more social activities for participants

Some of the positive comments offered by two or more participants included:

- Hospitality was excellent
- Meeting facilities were superior
- Staff should be commended for fine effort
- Excellent exchange of ideas and problems
- Outstanding selection of participants
- Very well planned and conducted
- Appreciated strict adherence to schedule
- A fine institute - staff and directors worked hard

Summary of Plans of Action

One of the expected outcomes of the institute was that each participant or group of participants (from a particular institution or state) would develop a tentative "plan of action" or statement of intent which had relevance for his or their work at home base. Even though the plans developed were tentative, they were to be realistic and a serious attempt made to implement them. Because of the wide diversity of these plans, the summary which follows had to be highly subjective and general in nature.

A copy of the plan of action assignment given each participant may be seen in Appendix E. The assignment suggested developing one of three possible projects:

(a) Outlining procedures for implementing a viable local or statewide evaluation system
(b) Planning an inservice training program for further disseminating the knowledges, skills, and materials obtained
(c) Outlining procedures for conducting a local or statewide follow-up system

It was recommended that the plan include a statement of the present situation with regard to evaluation, a statement of the desired situation, and the procedures to be followed to accomplish the desired situation. Three hours of regular institute time were allotted for development of the plans which were submitted to the institute staff on the last day of the conference.

Eighty-five of the ninty-two participants submitted an individual plan of action or participated with a group in the development of such. Seventy-four persons completed their plans while at the institute and eleven persons sent their plan to the institute director at a later date. A few of the group leaders and recorders, because of their responsibility for developing a group report, did not have time to prepare an individual plan. Two persons reported turning in plans which were never located.

Many of the participants chose the option of working together with other persons from their state. A total of 49 different plans of action were submitted by the 85 participants. Thirty of the plans were individually developed and the other 19 plans were cooperatively developed by 55 participants working mostly in teams of two or three persons. In several instances, everyone from the same state, regardless of their level of responsibility, worked together. The plans developed by these groups were of a general nature and without the close adaptation to individual situations which was desired. These groups were desirable, however, from the standpoint of providing local and state leaders an opportunity to interact and cooperatively plan an evaluation approach more acceptable to all.

As called for in the instructions, nearly all of the plans contained a section describing the present status of evaluation in their school or state. Participants in nearly half of the plans indicated there was no significant program evaluation effort of any type taking place. Some typical comments included:

"Program evaluation is limited to what the state supervisors do on their periodic visits"

"Our evaluation procedures are not well defined"

"We have no standard system of evaluation at the present time."

In fifteen of the plans, the authors indicated that some type of process and/or product evaluation was being conducted. Emphasis in the past appeared to center on the use of evaluative criteria instruments on a self-analysis basis, but some had recently initiated or were in the process of developing a student follow-up system. Ten of the plans developed did not contain any description of the present situation.

Another way in which the plans were analyzed was in terms of the type of program proposed. Most of the plans, 41 of the 49, described what might be labelled a fairly comprehensive approach to evaluating local or state programs of vocational and technical education. The comprehensive programs described in most cases included specific procedures for evaluating both the program process and the program product. General and/or specific objectives of the evaluation effort were stated in many of the plans.

Some of the most common objectives listed were as follows:

1. To evaluate existing programs in terms of stated objectives
2. To measure the effectiveness and efficiency of vocational education programs and services
3. To make recommendations for program improvement and program expansion
4. To determine the extent to which programs are meeting student and manpower needs
5. To develop state and local leadership competencies

About one-half of the comprehensive plans, 21 of the 41, included plans for conducting some type of evaluation training program. Most of these were workshops for local teachers, directors or other vocational program administrators. A considerable number of training programs were planned for members of state staffs and teacher educators.

A relatively small number of the plans, 8 of the 49, outlined procedures for conducting a specific type of evaluation or for evaluating a specific program. Activities proposed included two plans for conducting a follow-up study, two for making a cost-benefit analysis, and one calling for the development of evaluative criteria instruments for each vocational service area. Specific programs to be evaluated included an inservice teacher training program and one pre-service teacher education program. One participant, a vocational director for a new area school, had no programs in operation but was planning to make evaluation a part of the program development process.

Instructions for the plan of action assignment included the suggestion that a tentative time schedule of activities be developed. Twenty-five of the 49 plans submitted included some type of activities schedule. Most participants planned activities covering a one-year period, but a few projected their plans over a two- or three-year period.

In summary, tentative plans of action were developed by most of the participants. They ranged in length from one page to six pages, and in quality from high to low. Most of the plans outlined a fairly comprehensive evaluation program, while a few were concerned with only one type of activity. Considering the amount of time allotted for plan development, most of the participants did a very acceptable job. For the interested reader, three sample plans modified only to make them unidentifiable are included in Appendix E.

Institute Follow-up

On April 3, 1970, eight months after the institute was held, a brief follow-up form was sent to each of the ninty-two participants for the purpose of determining how they had modified and/or expanded their evaluation activities since the institute. Participants were also asked to indicate whether they had conducted or assisted with training programs on evaluation since the institute, and to indicate the extent to which they had been able to initiate or complete activities outlined in their plans of action. It was believed the best measure of the effectiveness of the institute would be indicated by its outcomes-- the future activities of its participants.

The authors wish to point out their awareness that undoubtedly some of the evaluation activities reported by the participants were a direct result of the institute, while at the same time others resulted in part from the institute and in part from other factors. It is also likely that the institute may have had little or no influence on some of the activities reported. No attempt was made to determine the degree of influence the institute had on the activities reported. In explaining the findings, the tacit assumption has been made that the institute probably influenced to some extent all the activities reported.

A cover letter and pre-addressed stamped envelope accompanied the follow-up form. To help the participant in responding to the question about his plan of action, a copy of the plan he developed or helped develop was also mailed. A copy of the follow-up form used may be seen in Appendix D.

Twenty-four of the 32 trainees classified as having local or regional responsibilities returned their follow-up questionnaire for a 75% response. Of the 60 participants categorized as having state or national responsibilities, 44 returned their forms for a 73.3% return. The overall response rate was 73.9%, with 68 out of the 92 trainees responding. From a desire to assure trainees of as much confidentialness as possible, the questionnaires were not coded and did not require the signature of the respondent. It was felt that coding and/or requiring a signature would have an inhibiting effect on the honesty and frankness of responses. Although most did sign their form, several did not, making positive identification of non-respondents impossible. Therefore, one mailing only of the questionnaire was used. Returns of 70 to 80% are generally considered characteristic of reputable educational research, and sufficient to eliminate the effect of non-response bias.

Since it was felt that the type of activities initiated and/or modified might depend to a considerable degree upon the participants' level of responsibility, the results of the follow-up are reported in three ways. First, the responses of persons working at the local or regional level are presented and discussed. These results are followed by a summary of the responses of persons working at the state or national level, and finally by a summary of all participant responses.

The first question on the follow-up asked "Which of the following evaluation activities, if any, have you modified and/or initiated since your participation in the institute?" A list of eleven activities was developed after a careful review of the plans of action submitted by the participants. Respondents were asked to check as many of the items in each column as was appropriate. Table III presents a numerical summary of the responses given by participants having local or regional responsibilities.

TABLE III

FREQUENCY OF EVALUATION ACTIVITIES MODIFIED AND/OR INITIATED AS REPORTED BY TWENTY-FOUR PARTICIPANTS HAVING LOCAL OR REGIONAL RESPONSIBILITIES

Activity	No. Reporting Activity Modified	No. Reporting Activity Initiated
Program philosophy and objectives	7	10
Citizen evaluation committee(s)	3	10
Student follow-up survey	7	9
Staff evaluation committee(s)	9	9
Self-evaluation procedures	5	9
Program evaluative criteria	9	8
Manpower needs survey	5	8
State evaluation guidelines	1	7
Visiting team evaluations	4	5
Employer satisfaction survey	4	4
Cost-effectiveness study	2	3
Other	1	1

A quick glance at Table III indicates that these trainees were involved in modifying and/or initiating a large number of evaluation activities. The five major activities initiated by participants since the institute include: (a) developing program philosophy and objectives, (b) using citizen evaluation committees, (c) using staff evaluation committees, (d) conducting student follow-up surveys, and (e) using self-evaluation procedures.

A large number of persons were also involved with the initiation of manpower needs surveys, the development of program evaluative criteria, and the establishment of state evaluation guidelines. A few mentioned that they as local-level persons were not responsible for establishing state evaluation guidelines but that they had actively participated in their development.

Fewer activities were reported as having been modified by these participants. One reason for this may be inferred from reviewing the plans of action which contained a description of their present situation.

In many instances, local and regional level personnel stated that little and in some cases nothing in the way of evaluation was being done. Those having evaluation activities underway reported the most modification being made in student follow-up surveys, program evaluative criteria, program philosophy and objectives, and in the use of staff evaluation committees.

TABLE IV

FREQUENCY OF EVALUATION ACTIVITIES MODIFIED AND/OR INITIATED AS REPORTED BY FOURTY-FOUR PARTICIPANTS HAVING STATE OR NATIONAL RESPONSIBILITIES

Activity	No. Reporting Activity Modified	No. Reporting Activity Initiated
Program evaluative criteria	15	18
State evaluation guidelines	13	18
Student follow-up survey	16	16
Program philosophy and objectives	14	16
Staff evaluation committee(s)	9	15
Visiting team evaluations	8	14
Self-evaluation procedures	7	14
Manpower needs survey	9	13
Citizen evaluation committee(s)	4	10
Cost-effectiveness study	3	8
Employer satisfaction survey	5	6
Other	1	3

Table IV presents a list of the activities and the frequency with which they were modified and/or initiated by participants having state or national responsibilities. A comparison with Table III indicates that these persons were involved to a greater extent with the initiation of activities as compared to modifying activities already underway. All but two of the activities listed were initiated by ten or more persons working at the state or national level. Two activities, the development of program evaluative criteria and the development of state evaluation guidelines, were initiated by eighteen persons. Two other evaluation activities, conducting a student follow-up survey and developing program philosophy and objectives, were started by sixteen persons.

A large number of activities were also modified by this group of participants since attending the institute. The activity reported as being modified more times than any other was that of conducting a student follow-up survey. This same activity was tied for top ranking among those activities reported as modified by local and regional level persons. Other activities shown by Table IV as being modified most frequently include: program evaluative criteria, program philosophy and objectives, and state evaluation guidelines.

A summary of the responses of all participants to the question of which evaluation activities have you modified and/or initiated is presented in Table V. Considerably more activities were reported as being initiated as contrasted with the number of activities being modified. This response may well be a reflection of the fact, also reported in the plans of action developed, that not much was being done in the way of evaluation at any level in some states. On the other hand, a considerable number of participants reported they had made modifications in some of their evaluation activities. It may be inferred that some, and probably most, of the participants learned of new activities they could initiate as well as ways to improve their present procedures, while attending the institute.

TABLE V

FREQUENCY OF EVALUATION ACTIVITIES MODIFIED AND/OR INITIATED AS REPORTED BY SIXTY-EIGHT PARTICIPANTS AT ALL LEVELS OF RESPONSIBILITY

Activity	No. Reporting Activity Modified	No. Reporting Activity Initiated
Program evaluative criteria	24	26
Program philosophy and objectives	21	26
Student follow-up survey	25	25
State evaluation guidelines	14	25
Staff evaluation committee(s)	16	24
Self-evaluation procedures	12	23
Manpower needs survey	14	21
Citizen evaluation committee(s)	7	20
Visiting team evaluations	12	19
Cost-effectiveness study	5	11
Employer satisfaction survey	9	10
Other	2	4

Activities reported as modified by twenty or more of all the participants included: student follow-up survey, program evaluative criteria, and program philosophy and objectives. The two activities reported modified the least number of times were cost-effectiveness studies and use of citizen evaluation committee(s).

A look at Table V indicates that most of the activities listed were initiated by over twenty participants. Evaluation activities receiving the most attention were as follows: program evaluative criteria, program philosophy and objectives, student follow-up surveys, and state evaluation guidelines.

Perhaps just as significant as the activities receiving the most attention is the fact that the same two activities, cost-effectiveness studies and employer satisfaction surveys, were initiated fewer times than the other activities by both groups of participants. The complexity and early stage of development may explain the low level of interest in cost-effectiveness studies. Over twice as many such studies were being initiated by state level personnel as by local level personnel.

Also significant is the fact every participant indicated he had been involved in modifying or initiating at least one evaluation activity since the institute. Most reported involvement with several activities.

The second question on the follow-up requested information on the type of evaluation training programs, if any, that participants had conducted or assisted with since the institute. The intent of this question was to determine to what extent participants had shared with others the knowledges and skills obtained at the institute. Of the twenty-four local and regional level trainees, eight reported involvement with training programs on evaluation. Two of the respondents had been involved with two programs each. All the training programs were of an inservice nature involving teachers, counselors, and/or administrators.

The length of training program was reported in terms of hours or days by all but two of the respondents. One respondent indicated ten persons were involved in a "continuing program" and another replied that "numerous committee meetings" had been held. The length of other training programs varied from three hours to two weeks with the average program being about three days in length.

The number receiving training from participants having local or regional responsibilities varied from 10 persons to 150 persons. The total number reported involved in such programs was 448.

Participants working at the state or national level were involved to a greater extent than those working at the local level in conducting training programs. While only one-third of the local or regional persons were involved, considerably more than half of the 44 state and national participants had worked with such programs. Five of the 26 had worked with two or more training programs. Most of the programs were of an inservice nature involving either state staff personnel and/or local vocational directors and administrators. Two vocational teacher educators reported teaching graduate classes on program evaluation, and one indicated four weeks of a graduate course were devoted to product evaluation.

Excluding the graduate classes, the length of these programs varied from one hour to six days with most being one or two days in length.

The total number reported to have received some evaluation training was 2221. The number trained per program ranged from 6 persons to 600. Most programs involved training groups of 30 to 40 persons.

One-half of the 68 participants responding to the follow-up indicated they were involved with one or more evaluation training programs. These programs involved a total of 2669 persons in programs of varying length. Most programs were of an inservice nature involving workshops and conferences for vocational teachers, administrators, and state staff personnel. This type of involvement by participants in an eight month period since the institute provided much opportunity for these persons to further disseminate the knowledges and skills they had obtained.

The third question on the institute follow-up was designed to provide some measure of the extent to which the participants who developed a tentative "plan of action" while at the institute were able to return to home base and actually initiate or complete the activities they had outlined. The reader is reminded at this point that many of the plans of action developed were quite comprehensive, including a large number of planned activities, while a few others were brief, specifying only one or two activities. Another factor influencing responses to this question was the fact that some developed a time schedule of activities which extended over a period of one or two years. Since the follow-up was conducted eight months after the institute, there was insufficient time for many to complete their planned schedule of activities. To help the respondent be as objective as possible in replying to this question, a copy of each participant's individual plan or the plan which he cooperatively developed with other participants was mailed with the follow-up form.

Table VI shows how the participants responded to question three. A majority of both groups of participants reported that they had initiated or completed "some" of the activities outlined in their plans of action. Only one person in the case of the local and regional level participants and two persons in the case of state and national level participants, indicated that "none" of the planned activities had been carried out. Two of the latter explained their lack of activity. One trainee commented "my area of responsibility has been changed" and the other indicated the evaluation program in the state had "very low priority" and no assigned staff.

TABLE VI

SUMMARY OF THE EXTENT TO WHICH PARTICIPANTS HAVE BEEN ABLE TO INITIATE OR COMPLETE THE ACTIVITIES OUTLINED IN THEIR PLANS OF ACTION

Extent Activities Initiated or Completed	Local and Regional Participants		State and National Participants		All Participants	
	No.	Percent	No.	Percent	No.	Percent
None	1	5	2	4.9	3	4.9
Some	12	60	26	63.4	38	62.3
Most	7	35	10	24.4	17	27.9
All	0	0	3	7.3	3	4.9
No Response	4	16.3	3	6.8	7	10.3

A fair percentage, 27.9, of all the participants reported they had been able to initiate or complete "most" of the activities planned. None of the local level participants and only three of the state level participants indicated "all" of their planned activities had been carried out. Seven of the participants did not respond to this question. Some of these persons had served as group leaders and recorders during the institute and as a result of these responsibilities, did not have time to prepare and submit a plan of action. Two persons indicated a plan had been prepared and submitted but copies of them could not be located. Although a higher level of completion is desirable, in view of the comprehensiveness of most of the plans and the longer than eight months time schedule required to implement some of the activities, it was concluded that satisfactory progress was being made by most of the participants.

The last item on the follow-up solicited comments. Some participants responded with positive comments about the institute, but most were of a neutral vein describing their experiences and activities since the institute. Many reported they were involved or responsible for developing an effective system of evaluation for their school or state. The following responses were selected from the many comments made.

- "Institute provided valuable background information and experience - materials received there have formed basis for statewide evaluation of vocational education"

- "One of my graduate students has developed a model for evaluating area vocational programs - the model is being tried out and the study should be completed this summer."

- "Institute has proved to be very helpful to me and to our district in re-evaluating our position and developing a more effective system."

- "I have been able to use many of the techniques learned at the conference to improve, implement, and further develop the evaluation activities which relate to programs under my supervision. Major thrusts have been made in the area of product evaluation."

- "Product evaluation, though simple in concept, is difficult to implement. However, I'm convinced more and more that the evaluation we conduct should begin with our product."

- "The Interim Council of NCA has now endorsed "product evaluation" as one effective means of ascertaining quality in occupational education programs."

IV. REPORTS, CONCLUSIONS, AND RECOMMENDATIONS

Reports

Besides providing the participants with additional knowledges and skills for improving vocational education evaluation, the institute was planned to result in three other outcomes. One important outcome, the development of plans of action, was described in the previous chapter. The other two outcomes, development of task group reports and the development of a general guide for improving vocational education evaluation are described here.

The task force groups were established with two major objectives in mind. One objective was to provide a setting where each trainee would have an opportunity to interact with other participants in a thorough review and synthesis of the papers presented in such a way as to obtain group consensus, where possible, as to the best strategies and techniques of program evaluation available. A copy of the complete task group assignment may be seen in Appendix E.

Four major areas of concern or approaches to evaluation were identified by the program planning committee. They were as follows:

(a) State directed evaluation of statewide programs

(b) State directed evaluation of local programs

(c) State assisted evaluation of local programs

(d) Locally directed evaluation of local programs

The eight task force groups were organized around these areas of concern with the assignment of participants being made according to their preference. A leader and a recorder selected from the participants was appointed to provide leadership to each group. The leaders and recorders were given special instructions and an opportunity to ask questions at a meeting held the evening before the opening of the institute. Daily staff meetings also provided an opportunity to check on the progress each group was making and to provide new inputs when needed. A considerable amount of time was devoted to the task group sessions and a representative of each group was called upon to make an oral report at the general session on Friday morning. The full text of each report may be found in Appendix G.

The final outcome sought was the development of a general guide on strategies and procedures that could be used by others responsible for evaluating programs. The task force reports as well as the original papers presented were the major inputs used by the institute staff in developing this guide. By design, and reflecting the state of the art, the guide is brief and general in nature. A copy of the guide is presented in Appendix H.

Conclusions

The institute was planned so as to focus on four major purposes or expected outcomes. They were as follows:

1. Participants would be provided with additional knowledges and skills needed for improving vocational education evaluation.
2. Participants would initiate the development of an evaluation plan or scheme which had relevance for use within their agency or organization.
3. Task force groups would review and synthesize the papers presented in order to recommend the best or most promising approaches and techniques of evaluation available.
4. The institute staff using the task group reports as well as other available inputs would prepare a general guide on strategies and procedures of evaluation.

After analyzing participant satisfaction with the total program, reviewing the plans of action developed and the task group reports prepared, and studying the results of the follow-up survey, it is concluded that the Institute for Improving Vocational Education Evaluation was successful in accomplishing its major purposes. The focus of the institute evaluation effort was on outcomes: the future activities of the participants rather than on the process and instructional objectives of the institute, although general satisfaction with the program organization and instructional content was indicated by scores on the Institute Evaluation Scale. Responses on this scale indicated that most of the participants either agreed or strongly agreed that an institute of this nature should be offered again and that the information presented would be useful to them as vocational educators. The major criticism indicated was that the information presented was too theoretical.

In terms of immediate outcomes, the participants either individually or cooperatively developed an evaluation plan relevant to their responsibilities at home base. Responses on the follow-up survey indicated that in most cases some of the activities planned have been initiated or completed since the institute. In fewer cases, most of the activities planned had been carried out. From all indications, most participants made a serious attempt to implement the activities planned. In view of the comprehensiveness of most plans and the limited time available, it was concluded that satisfactory progress was being made by most participants.

Responses on the follow-up survey also indicated that the participants had been extensively involved, with few exceptions, in modifying and/or initiating a wide variety of specific evaluation activities. Several comments made on the follow-up survey indicated that the skills and materials obtained while at the institute were of considerable value to them as they conducted these activities.

Another outcome was also realized to a considerable extent. This outcome concerned the further dissemination of knowledges and skills for improving vocational education evaluation. One-half of the 68 participants responding to the follow-up, reported they had conducted or had assisted with an evaluation training program during the eight month period following the institute. These training programs disseminated at least some of the techniques and procedures of evaluation reviewed during the institute to over 2,660 persons.

Several constructive criticisms and several positive comments about the institute were offered by the participants. Although many of the criticisms were valid and have influenced the recommendations made later in this chapter, it was concluded that none were serious enough nor made by enough participants to question the overall success of the institute.

Many of the participants also offered suggestions regarding areas or topics they felt should be included in future institutes. Most of the topics recommended had been covered to some extent but more adequate coverage would have been desirable. Again, these suggestions are reflected to some extent in the recommendations made.

Recommendations

Based on the evaluative comments provided by the institute participants and the experiences of the institute staff the following recommendations are made:

1. While the institute described in this report was successful in making a start toward improving vocational education evaluation, much more remains to be done. The evaluation task is complex and too important to leave to the untrained or uninformed. The primary recommendation made is that additional institutes, with the modifications described herein, be held throughout the country. To reduce costs these might be held on a regional or state basis, with all persons having major responsibility for program evaluation invited to attend.

2. Although a majority agreed that the information presented was too theoretical, an even greater majority disagreed with the statement "that the information presented was too advanced." This apparent contradiction is hard to explain but it seems certain that there was considerable difference in the evaluation experience and knowledge of the various participants. To avoid frustrating the beginners and boring those already having considerable evaluation expertise, consideration should be given to holding separate conferences for each type of participant. Another possiblity would be to have split sessions running concurrently, one for the beginners and another for the participant with some experience.

3. Participants should be selected as early as possible and supplied with more introductory materials. Advance knowledge of the specific topics to be covered would facilitate learning and enable the participants to bring related resource materials with them.

4. The presenters should be instructed to place less emphasis on the theories of evaluation and more on how to make practical application of appropriate evaluation techniques. (Note: The consultants were asked to stress the "how to do it" aspect of evaluation but some failed to do so). One approach that appears worthy of trial would be to have all participants and consultants visit a local vocational program, and then have the consultants relate their presentations to the evaluation of that program.

5. Some of the most effective learning seems to take place in small group sessions and more time should be devoted to such work. If such groups are expected to produce a quality written report, in addition to discussing the issues, more time is essential. Providing detailed instructions and training to carefully selected group leaders is also vital.

6. In order to make more time available for small group work, it is recommended that fewer formal presentations be made or that the formal presentations be of shorter duration. Some background information could be provided by means of resource papers given out prior to the presentations.

7. It is recommended that the practice of having each participant develop a tentative program of activities or plan of action be continued. This type of assignment stimulates the individual to carefully synthesize the material presented and to consider how he can make practical application of it. Trainees should be notified in advance that they will be expected to develop such a plan.

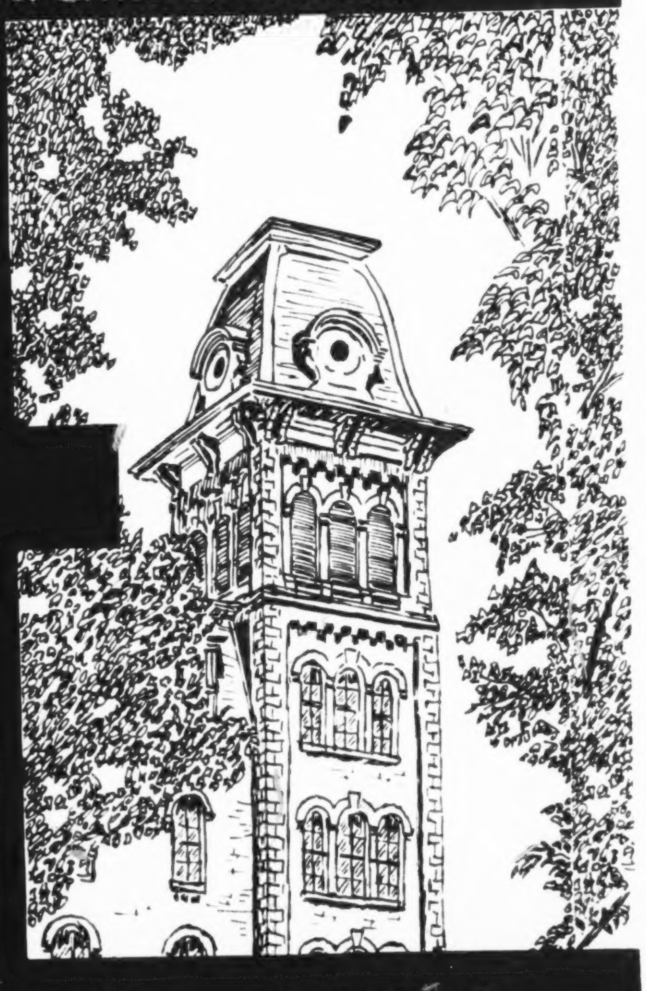
8. Although considerable attention was given to most of the topics suggested for future institutes on evaluations, three of them should be given increased emphasis. First, greater attention should be given to the preparation and use of measurable program objectives. Second, more time should be devoted to discussing development and selection of appropriate evaluation instruments. Third, more emphasis should be placed on interpreting data and formulating recommendations.

APPENDIX A

BROCHURE AND APPLICATION FORM

IMPROVING VOCATIONAL EDUCATION EVALUATION

A Short-Term Training Institute
under a grant from the
U. S. Office of Education



August 4-8, 1969

CONDUCTED BY THE
Department of Vocational Education
COLLEGE OF EDUCATION
University of Arkansas
Fayetteville, Arkansas

UNIVERSITY OF ARKANSAS

IMPROVING VOCATIONAL EDUCATION EVALUATION

PURPOSE OF THE INSTITUTE

The institute is designed to equip persons in leadership positions with knowledges and skills for improving vocational education evaluation. It is designed to provide insights into a relatively unexplored area, and to provide trainees with the techniques and procedures needed for obtaining valid and reliable evaluative data. In addition to developing the leadership competencies of 100 participants from across the nation, the institute will result in the design and preparation of a guideline booklet on strategies and procedures of evaluation that can also be used by others responsible for evaluating programs.

THE PROGRAM

Through the use of presentations, small group discussions, committee assignments and other means which permit individual participation, trainees will review and discuss procedures and techniques of evaluation which are effective in obtaining the information needed for sound educational decision-making. Each trainee through his participation in the small group sessions will have an opportunity to interact with the consultants and others who are confronted with similar problems.

The primary objectives of the institute are as follows:

1. To emphasize the contribution that well-designed evaluations can make to sound educational decision-making (program planning and program improvement).
2. To identify program objectives specified in vocational education legislation and their relationship to evaluation.
3. To recognize the basic requirements essential to program evaluation efforts at the local, State, and National level.
4. To review selected theoretical and operational approaches to evaluating vocational education programs at these levels including:
    a. Determining data requirements
    b. Reviewing techniques for obtaining the data needed
    c. Reviewing mechanisms for interpreting and reporting the data
    d. Reviewing strategies and administrative procedures essential in developing and implementing a viable evaluation program.

The major content topics will include: the objectives and scope of evaluation, the relation of evaluation to decision-making, data requirements for effective evaluation, review and assessment of operational evaluation systems, procedures and criteria for instrument selection and development, procedures for organizing, interpreting, and disseminating evaluative information and administering program evaluations.

PARTICIPANT SELECTION

A committee will select 100 participants from the applications received. A wide geographic distribution of participants is intended and no major region of the country will be omitted. An effort will be made to select participants representing local, area, and state vocational education programs who will not only benefit from the institute but who will also be able to contribute to its productivity.

To qualify as participants, persons must be state directors or supervisors of vocational education, members of state advisory councils, assistant superintendents of city schools, directors of city vocational education, directors of area vocational schools, or otherwise responsible for evaluating vocational education programs. Since University credit will not be offered, no pre-admission requirements are necessary.

Major factors to be considered in the selection of applicants will include: educational experience, previous evaluation activities, present and future employment responsibilities, degree of interest in improving or establishing an effective evaluation program at home base, and potential for use and application of competencies acquired at the institute.

TRAVEL AND ACCOMMODATIONS

It is anticipated that sufficient travel money will be available to pay actual transportation costs. The cost, regardless of the mode of travel, cannot exceed that of a single round trip air-coach flight from the nearest point of departure to Fayetteville, Arkansas. Reimbursement will be made upon receipt of ticket stub or other suitable evidence of actual cost incurred.

All participants will be expected to live and obtain meals in the new Pomfret Housing Complex. Any exceptions to the latter must be approved by the Director. The housing complex features a modern residence with air-conditioned dining, lounge, and meeting room facilities. All rooms are doubles but may be occupied singly providing the participant is willing to pay an extra $5.00 charge. The rooms do not have private baths, but linens, blankets, towels, pillows, soap, and maid service will be provided. Older children and spouse may also live and board in this housing for the week at a cost to the participant of $28.50 per person.

Since the University will be providing all room and board, participants will **not** receive any stipends to defray the costs of housing and meals.

SUMMER INSTITUTE
August 4 - 8, 1969

Institute Staff

Director—Dr. Robert E. Norton
Assistant Professor of Vocational Education
University of Arkansas

Associate Director—Dr. E. Lamar Love
Associate Professor of Vocational Education
University of Arkansas

Consultants who will be making presentations include:

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Professor of Education
Michigan State University
Dr. John K. Coster
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North Carolina State University
Mr. N. Edwin Crawford
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Mr. Michael Russo
Director Planning and Evaluation Branch
DVTE, U. S. Office of Education
Dr. Harold Starr
Center for vocational and Technical Education
Ohio State University

Non-Discrimination Provision

Discrimination prohibited — Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, creed, sex, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal assistance."

The University of Arkansas operates in compliance with this law.

Deadlines

Completed applications must be postmarked **no later** than July 3, 1969.

Applicants will be notified of the selection committee action by July 15, 1969.

Participants will be expected to arrive by Sunday evening August 3 and stay until 3:00 p.m. Friday, August 8, 1969.

Requests for Applications or Information

For applications and/or information, contact:

Robert E. Norton
Department of Vocational Education
University of Arkansas
Fayetteville, Arkansas 72701
Phone — Area 501 - 575-4758

APPLICATION FORM (Please type or print and use attached sheet if necessary)

NATIONAL INSTITUTE ON IMPROVING VOCATIONAL EDUCATION EVALUATION
Department of Vocational Education
University of Arkansas, Fayetteville, Arkansas
August 4-8, 1969

GENERAL INFORMATION

Name Miss / Mrs. / Mr. / Dr. ______________________________
(Last) (First) (Middle)

Mailing Address: ______________________________

Phone: ______________ Area Code

______________ Number

EDUCATIONAL HISTORY

Baccalaureate ______________________________
major area school year

Master's ______________________________
major area school year

Doctorate ______________________________
major area school year

Other ______________________________

PROFESSIONAL EXPERIENCE

Current Position ______________________________
title years held

____
employer's name location

Major Responsibilities ______________________________

Previous Positions Held and Major Responsibilities (last five years).

____

Briefly describe past evaluation and/or program development activities in which you have been involved. List any articles or other publications dealing with evaluation which you have developed or contributed to.

Briefly describe current or anticipated evaluation and/or program development activities in which you are or will be involved.

What is your purpose in desiring to participate in this institute?

In what area and/or manner do you perceive your participation can contribute most to this conference?

What knowledges, skills, and/or materials would you most like to obtain from this institute?

Four areas of major concern to evaluation will be examined in small group sessions for their relevance and synthesis into a guideline booklet for national distribution. Indicate your first, second, and third choice in the appropriate spaces.

a. State Directed Evaluation of State Wide Programs ( )
b. State Directed Evaluation of Local Programs ( )
c. State Assisted Evaluation of Local Programs ( )
d. Locally Directed Evaluation of Local Programs ( )

IF ACCEPTED AS A PARTICIPANT:

a. Indicate your most likely mode of travel _____air, _____auto, _____other. If you plan to drive, would you be willing to share a ride with another from your state _____yes, _____no.
b. Would you be bringing members of your family with you _____yes, _____no. If yes, please give their name(s) and relationship to you.
c. Indicate the type of housing desired.
  _____ I will share a double
  _____ Reserve me a single, I will pay the extra $5.00 charge.
  NOTE: Plans call for housing participants in double rooms but singles are available for a nominal cost to the participant.
d. I agree that if accepted to participate in this institute I will be in attendance for the entire five-day period (Monday 8:00 a.m. to Friday 3:00 p.m.). Further, I understand that room and board will be provided me but that I will not be directly reimbursed for per diem or other expenses except travel incurred as a result of my participation in this institute.

____
Signature

Applications must be postmarked no later than July 3, 1969.

PLEASE COMPLETE AND RETURN TO:
Dr. Robert E. Norton, Institute Director
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Fayetteville, Arkansas 72701

APPENDIX B

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APPENDIX C

SPECIMEN OF INSTITUTE PROGRAMS

- National Institute -
Improving Vocational Education Evaluation

AUGUST 4-8, 1969

GRADUATE EDUCATION BUILDING

Department of Vocational Education
COLLEGE OF EDUCATION
University of Arkansas

PURPOSE OF THE INSTITUTE

This institute is designed to equip persons in leadership positions with knowledges and skills for improving vocational education evaluation. It is designed to provide insights into a relatively unexplored area, and to provide trainees with the techniques and procedures needed for obtaining valid and reliable evaluative data. Trainees will review and discuss procedures and techniques of evaluation which are effective in obtaining the information needed for sound educational decision-making. The institute will also result in the design and preparation of a guideline booklet on strategies and procedures of evaluation that can be used by others responsible for evaluating programs.

SPECIFIC OBJECTIVES

1. To emphasize the contribution that well-designed evaluations can make to sound educational decision-making (program planning and program improvement).

2. To identify objectives specified in vocational education legislation and their relationship to evaluation.

3. To recognize the basic requirements essential to program evaluation efforts at the local, State, and National level.

4. To review selected theoretical and operational approaches to to evaluating vocational education programs at these levels including:
    a. Determining data requirements
    b. Reviewing techniques for obtaining the data needed
    c. Reviewing mechanisms for interpreting and reporting the data
    d. Reviewing strategies and administrative procedures essential in developing and implementing a viable evaluation program.

5. To initiate the development of evaluation plans or schemes which have relevance for each participant's particular area and level of responsibility.

PROGRAM

Note: All events will take place in the Graduate Education Building unless otherwise indicated.

Sunday, August 3

8:00 p.m. Group Leader and Recorders Meeting
9:30 Consultants (Optional)
Pomfret Housing Complex

Small groups - Leader and recorder responsibility
Individual and team "Plan of Action"
Questions and Answers

Monday, August 4

8:00- 8:30	Registration - Lobby of Auditorium
8:30- 9:00	Welcome: Dr. Henry H. Kronenberg, Dean, College of Education Orientation: Dr. Robert E. Norton, Institute Director Dr. E. Lamar Love, Associate Director
9:00- 10:00	"The Role of Evaluation in the Decision-Making Process" Dr. John K. Coster, Director Center for Occupational Education North Carolina State University
10:00- 10:30	Break
10:30- 11:30	"The Scope and Objectives of Vocational Education and Their Relationship to Evaluation" Mr. Edwin Crawford, Senior Program Officer Program Evaluation DVTE, U. S. Office of Education
11:30- 12:00	Questions and Answers Dr. John K. Coster---Responders Mr. Edwin Crawford
12:00- 1:30	Lunch
1:30- 2:00	Instructions and Assignments to Task Force Groups
2:00- 3:00	Small Group Organizational and Planning Meetings Group Leaders and Recorders
3:00- 3:15	Break
3:15- 4:30	Continuation of Group Meetings

4:30	Staff meeting: Consultants, group leaders, and recorders Room 116
7:00-7:30	Bus trips to Agriculture Park (leave from Pomfret Housing Complex at 7:00 and 7:15 p.m.)
7:30-9:15	Social Function and Entertainment
9:15-9:45	Bus returns

Tuesday, August 5

8:30-9:30	"A System for State Evaluation of Vocational Education" Dr. Harold Starr Center for Vocational and Technical Education The Ohio State University
9:30-10:00	Break
10:00-11:00	"State Directed Evaluation of Local Programs - THE PROCESS" Mr. Robert A. Mullen, Associate Director Vocational Education North Carolina Department of Public Instruction
11:00-11:30	Speaker and Group Leader Panel - Dr. Harold Starr Mr. Robert A. Mullen Four group leaders
11:30-1:15	Lunch
1:15-2:15	"State Assisted Evaluation of Local Programs - THE PRODUCT" Dr. Jerome Moss, Jr., Co-Director Minnesota RCU University of Minnesota
2:15-2:45	Break
2:45 3:30	"Locally Directed Evaluation of Local Programs" Dr. Harold M. Byram Professor of Education Michigan State University

3:30- 4:15	Symposium of Directors of Local Evaluation Projects Mr. Bill L. Lewis, Russellville Mr. J.W. Grimes, Rogers Mr. W.H. McCutcheon, Harrison
4:15- 4:45	Speaker and Group Leader Panel Dr. Jerome Moss, Jr. Dr. Harold M. Byram Four group leaders
4:45	Staff meeting
5:30- 6:30	Dinner
6:30- 7:30	"Viewpoints of the National Advisory Council for Vocational Education" Mr. Jack Michie, Member National Advisory Council
8:00- 10:00	Review of Institute Reference Materials Pomfret Housing Complex

Wednesday, August 6

8:00- 9:00	"Follow-Up Procedures for Vocational Education Students" Dr. Richard Whinfield Center for Studies in Vocational and Technical Education University of Wisconsin
9:00- 9:30	"Arkansas Vocational Student Information and Follow-Up System" Dr. William C. Arnwine Consultant, Arkansas RCU University of Arkansas
9:30- 10:00	Questions and Reactions by Participants to Presentations
10:00- 10:30	Break
10:30- 12:00	Small Group Task Force Discussions - Synthesizing Presentations for Implications and Guidelines. Group Leaders and Recorders
12:00 1:30	Lunch

1:30- 2:30	Interaction Panel of Consultants and Group Representatives General Session (Reply to questions developed on Monday afternoon and Wednesday morning.)
2:30- 3:00	Break
3:00- 4:00	Small Group Task Force Sessions "Review and Synthesize Evaluation Systems to Develop Basic Guidelines and Procedures" - Group Leaders and Recorders
4:00- 4:45	Individual and Team Work Assignments to Develop A Plan of Action for Home Base. (Develop statement of problem - objectives - strategies)
4:45	Staff Meeting
5:30- 6:30	Dinner
6:30- 7:30	"Views from the Chairman of A State Vocational Adivosry Council" Mrs. Caroline E. Hughes Oklahoma State Advisory Council
8:00 10:00	Review of Institute References Pomfret Housing Complex

Thursday, August 7

8:30- 9:30	"The Role and Potential of Cost-Effectiveness Studies in Evaluating Vocational and Technical Education Programs" Dr. Jacob J. Kaufman, Director Institute for Research on Human Resources Pennsylvania State University
9:30- 10:00	Questions and Reactions by Participants to Presentation
10:00- 10:30	Break
10:30- 11:45	Small Group Task Force Sessions - "Developing Models, Guidelines and Procedures for Improving Program Evaluation" Group Leaders and Recorders

11:45-1:30	Lunch
1:30-3:00	Continuation of Small Group Task Force Session
3:00-3:30	Break
3:30-4:30	Individual and Team Work Assignments to Continue Development of a Plan of Action (Group Leaders and Recorders prepare individual task group reports)
4:30	Staff Meeting
7:00-10:00	Review of Institute Reference Materials Pomfret Housing Complex

Friday, August 8

8:30-9:00	Small Groups: Final Session Group Leaders and Recorders
9:00-9:45	Individual and Team Work Assignments - Continued
9:45-10:00	Break
10:00-11:45	Small Group Task Force Reports Group Leaders and Recorders
11:45-1:30	Lunch
1:30-2:30	"Summary of Conference - Problems, Solutions, and Implications for Action" Mr. William Cummens Senior Program Officer Vocational-Technical Education Bureau of Adult, Vocational and Library Programs USOE, DHEW, Dallas
2:30-3:00	Evaluation of Institute
3:00	Adjournment

EVALUATION INSTITUTE

Program Planning Committee Members

Dr. Harold M. Byram, College of Education, Michigan State University

Dr. John K. Coster, Director, Center for Occupational Education, North Carolina State University at Raleigh

Mr. Edwin Crawford, Senior Program Officer, Program Evaluation, Division of Vocational and Technical Education, USOE

Dr. Jerome Moss, Jr., Co-Director, Minnesota Research Coordinating Unit in Occupational Education

Dr. Robert E. Taylor, Director, Center for Vocational and Technical Education, The Ohio State University

Dr. John A. Rolloff, Director, Arkansas Research Coordinating Unit of Occupational Education, University of Arkansas

Dr. E. Lamar Love, Associate Professor, University of Arkansas, Associate Director of Institute

Dr. Robert E. Norton, Assistant Professor, University of Arkansas, Director of Institute

APPENDIX D

EVALUATION FORMS USED

DEPARTMENT OF VOCATIONAL EDUCATION

UNIVERSITY OF ARKANSAS

INSTITUTE EVALUATION SCALE *

PART I - Directions:
Read each statement carefully and decide how you feel about it. You will agree with some statements and disagree with others. You are offered five possible answers to each statement. The "undecided" answer should be circled only when you have no opinion. Circle one number following each statement. Please answer all statements.

Example:	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
The telephone service for institute participants was inadequate.	5	4	3	2	1

This person feels in no uncertain terms that telephone service was inadequate.

Statements	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. The objectives of this institute were clear to me . . .	5	4	3	2	1
2. Specific purposes made it easy to work efficiently	5	4	3	2	1
3. The participants accepted the purposes of this program	5	4	3	2	1
4. The purposes of this institute were not realistic	5	4	3	2	1
5. The objectives of this program were not the same as my objectives	5	4	3	2	1
6. I didn't learn anything new . .	5	4	3	2	1
7. The material presented was valuable to me	5	4	3	2	1
8. I could have learned as much by reading a book	5	4	3	2	1
9. Possible solutions to my problems were considered	5	4	3	2	1
10. The information presented was too elementary	5	4	3	2	1
11. The speakers really knew their subjects	5	4	3	2	1
12. The discussion leaders were not well prepared	5	4	3	2	1
13. I was stimulated to think objectively about the topics presented	5	4	3	2	1

	Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
14.	The information presented was too theoretical	5	4	3	2	1
15.	New acquaintances were made which will help in my future work	5	4	3	2	1
16.	We worked well together as a group	5	4	3	2	1
17.	We did not relate theory to practice	5	4	3	2	1
18.	The sessions followed a logical pattern	5	4	3	2	1
19.	The schedule was too fixed. .	5	4	3	2	1
20.	The group discussions were excellent	5	4	3	2	1
21.	There was very little time for informal conversation	5	4	3	2	1
22.	I did not have an opportunity to express my ideas	5	4	3	2	1
23.	My time was well spent. . . .	5	4	3	2	1
24.	I really felt a part of this group	5	4	3	2	1
25.	The program met my expectations	5	4	3	2	1
26.	I have no guide for future action.	5	4	3	2	1
27.	Too much time was devoted to trivial matters	5	4	3	2	1
28.	The information presented was too advanced.	5	4	3	2	1
29.	The content presented was not applicable to occupational programs.	5	4	3	2	1
30.	Institutes of this nature should be offered again in future years	5	4	3	2	1
31.	Institutes such as this will contribute little to vocational education	5	4	3	2	1

	Statements	Strongly Agree	Agree	Un-decided	Dis-agree	Strongly Disagree
32.	The information presented will be useful to me as a vocational educator.	5	4	3	2	1
33.	The references available to participants were not appropriate	5	4	3	2	1
34.	The facilities for the institute were inadequate	5	4	3	2	1
35.	The dormitory and food service was excellent	5	4	3	2	1

PART II

1. How do you plan to apply the outcomes you have obtained from attending this institute? (Check the two most important)

_____Writing an article or other publication on this topic
_____Use in present research projects
_____Planning of vocational programs
_____Establishing an evaluation program for my school or institution
_____Establishing an evaluation program for my state
_____Increased knowledge of research in general
_____Preparation of curriculum materials
_____Improvement of teaching or supervision
_____Increased ability to advise others in planning occupational programs
_____Administration of occupational programs
_____Preparation of a research project
_____Other (please specify) ____

2. Indicate below areas or topics which you feel should be included in future institutes.

3. As you reflect upon this workshop and appraise it, write below any suggestions which would provide direction for planning and improving future institutes.

4. What comments, positive or negative, can you make which will assist us in evaluating the institute?

* Adapted from instrument designed by Eugene J. Weldon for use in U.S.O.E. supported (project No. ERD 444-65): The Further Development of Research Competencies in Vocational Education Research and Development, Charles W. Hill, Director, 1966.

EVALUATION INSTITUTE FOLLOW-UP

Directions: Please respond carefully to each of the following questions. Be assured that your responses will be treated confidentially.

1. Indicate your level of responsibility: _____ Local or regional

   _____ State or national

2. Which of the following evaluation activities, if any, have you modified and/or initiated since your participation in the Institute? (Check as many items in each column as are appropriate)

_______________ _______________ State evaluation guidelines
_______________ _______________ Program evaluative criteria
_______________ _______________ Program philosophy and objectives
_______________ _______________ Staff evaluation committee(s)
_______________ _______________ Citizen evaluation committee(s)
_______________ _______________ Visiting team evaluations
_______________ _______________ Self-evaluation procedures
_______________ _______________ Student follow-up survey
_______________ _______________ Employer satisfaction survey
_______________ _______________ Manpower needs survey
_______________ _______________ Cost-effectiveness study
_______________ _______________ Other (specify)__________________

3. What type evaluation training programs, if any, have you conducted or assisted with since the Institute?

   Type of Programs   Length of Program   Number Receiving Training

4. How many of the activities outlined in your "Plan of Action" have you been able to initiate or complete?

   _____ none of them   _____ most of them
   _____ some of them   _____ all of them

5. Comments: (Use back if desired)

____
Signature (Optional)

APPENDIX E

INDIVIDUAL AND TASK GROUP ASSIGNMENTS, AND SAMPLE PLANS OF ACTION

PLAN OF ACTION ASSIGNMENT

Each participant or group of participants (from a particular school or state) is asked to develop a tentative "Plan of Action" which has relevance for his or their work at home base. It is sincerely hoped that these plans will be the beginning of an improved and/or expanded evaluation effort for each participant's particular area and level of responsibility.

Some suggested projects include:

a. Outlining procedures for implementing a viable local or statewide evaluation system.

b. Planning an inservice training program for further disseminating the knowledges, skills, and materials obtained.

c. Outlining procedures for conducting a local or statewide follow-up system.

The plan should include at least the following areas:

a. Statement of present situation

b. Statement of desired situation; i.e., objectives for evaluation, essential minimum activities planned.

c. Procedures to be utilized to accomplish the desired situation; i.e., activities to be started, people to contact, tentative time schedule, etc.

One copy of the plan with the name or names of the participants working on it should be submitted to the Institute staff by 1:30 p.m. Friday.

TASK GROUP ASSIGNMENTS

One of the major purposes of the institute is to involve the participants in a thorough review and synthesis of the papers presented and the reference materials available. This review and discussion of the various procedures and techniques of evaluation available is intended to help each participant obtain additional knowledges, and skills needed for improving vocational education evaluation. Secondly, and equally as important, the small group discussions should result in the participants reaching a consensus as to what are the best strategies, procedures, and techniques of program evaluation available for their particular area of concern.* The small group reports will be the major input used by the institute staff in designing and preparing a general guide on strategies and procedures of evaluation that will be widely distributed for use by persons responsible for evaluating programs at the local, area, and state level.

The specific objectives, which are listed in the program brochure, should serve to provide guidance as to what points should be thoroughly discussed. Further, group leaders and participants should attempt to reach a consensus for their area of concern on at least the following major topics:

a. Role of evaluation in sound educational decision-making

b. Scope and objectives of vocational education and their relationship to evaluation

c. Basic data requirements for effective evaluation

d. Appropriate techniques for obtaining the data needed including:
    1. Types of data instruments needed
    2. Procedures for instrument development
    3. Criteria for instrument selection

e. Procedures for organizing, interpreting, and disseminating evaluative information

f. Administrative procedures effective in developing and implementing a viable evaluation program

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*The four areas of major concern to evaluation to be examined in small group sessions for their relevance and synthesis into a guideline booklet for national distribution are:
a. State Directed Evaluation of Statewide Programs
b. State Directed Evaluation of Local Programs
c. State Assisted Evaluation of Local Programs
d. Locally Directed Evaluation of Local Programs

Several time periods during the week are devoted to small group discussions. These sessions should be used as profitably as possible in completing the assignment outlined above. On Friday morning, each group will be called upon to present a written as well as a fifteen minute oral report.

These summaries will be made a part of the final report which will be submitted to the U. S. Office of Education for approval and eventual wide dissemination through the ERIC system.

SAMPLE PLAN OF ACTION *

Statement of Present Situation

A Vocational Education Information System has been initiated and is partly operational. The financial subsystem is being revised to meet the requirements of the state plan for vocational education. The enrollment and termination sections of the student subsystem are ready to be field tested.

The state is cooperating with The Ohio Center for Vocational and Technical Education in field testing Project: M2 - "A Further Refinement and Validation of a Model to Evaluate State Programs of Vocational and Technical Education."

Format and criteria have been developed for local self-evaluation. This process type of evaluation includes criteria for the areas of administration and supervision, facilities and site, equipment, instructional program, guidance services, and staff. The format and criteria were developed by state and local personnel.

Statement of Desired Situation

Our goal is to develop an evaluation system that will result in effective program improvement.

More specifically our objectives are:

(1) To develop a procedure to determine if our programs of vocational-technical education are fulfilling their stated objectives.

(2) To try-out evaluation procedures to determine their applicability to our state's program of vocational-technical education.

(3) To assist in the development of state and local leadership competencies necessary for evaluating vocational-technical education programs.

Procedures

The Vocational Education Information System will undergo further development. The student data subsystem will be field tested. The data from the student subsystem will be processed and disseminated to local schools. The facilities and equipment, financial, instructional program, and staff subsystems will be developed and implemented.

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* Adapted from a plan of action submitted by a group from one state.

The state will cooperate with The Ohio Center for Vocational and Technical Education in testing the refined instruments for Project M2 - "A Further Refinement and Validation of a Model to Evaluate State Programs of Vocational and Technical Education."

Emphasis will be placed on assisting local schools to develop meaningful evaluation procedures and techniques. Next year one comprehensive school will be selected from each of the state's thirteen vocational regions along with two area schools to participate in a demonstration project. Some of the activities and/or features of the project will include:

(1) use of local school staff committees
(2) use of local advisory committees
(3) use of workshops for local project leaders
(4) use of consultants
(5) conducting student follow-up
(6) employer survey of former student employees
(7) cost-effectiveness
(8) evaluate the evaluation

Tentative Flow Chart of Activities

August 11-	Student Information System instruments and manual to printer
August 15-	Student Information System presented to vocational teachers
August 16-	Proposal for local evaluation presented to state agency
August 20-	Student Information System presented to regional superintendents
August 25-30-	Student enrollment instruments to schools for field testing
August 30-	State Department of Education approval of local evaluation proposal
September 1- October 15	Programming of Student Information System
September 1-10-	Local evaluation project Advisory Committee meeting
October 1-	Select schools for local evaluation project
October 5-	Orientation meeting for local project on evaluation
September 19-	Student enrollment cards returned
September 20- October 20	Student enrollment card punching
October 15-18-	Workshop for local project leaders
November 1-	Facilities and equipment subsystem developed
November 15-	Computer print-outs of enrollment, data and student termination report to local districts
November 20-	Project review meeting
December 15-	Review vocational education information subsystems
January 10-	Implement facilities and equipment subsystem
February 15-	Summarize facilities and equipment subsystem
March 20-	Project review meeting
April 1-	Disseminate state follow-up section of student subsystem

April 15-	Field test state follow-up
May 20-	Project review meeting

SAMPLE PLAN OF ACTION *

Statement of Present Situation:

In 1967 we completed an evaluation of our local programs. This was a part of the Research and Development Project in Vocational Education sponsored by X University.

At present our local school district is in the process of planning a new high school. The architect has been hired and the vote is scheduled for this fall.

Our school district is planning on constructing an area vocational center which would allow up to 20% of our 11th and 12th grade students to be served. The architect is employed and a vote is scheduled for November 4, 1969.

As a result of these two plans it will be necessary to evaluate our present vocational education programs: business education, distributive education, electronics, drafting, metal technology, automotive service, agriculture, home economics and home construction.

It will also be necessary to study the proposed area center curricula. As a result of these two studies a recommendation can be made concerning the vocational curricula and facilities for the proposed new high school. It has been recognized that our present agriculture and home economics programs will have to be changed to meet current needs.

OBJECTIVES OF THE PROJECT

A. To evaluate existing vocational education and practical arts programs.

B. To study the proposed curricula for the area vocational center.

C. To investigate what is being done in occupational orientation grades K-8.

D. To make curriculum and facility recommendations for our proposed new high school.

The procedures to be utilized to accomplish the desired situation are as follows:

A. Form a staff and general advisory committee.

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* Adapted from a plan submitted by a local director of vocational education.

B. Follow-up all graduates from 1959 to 1964.

C. Follow-up vocational students from 1965 to 1968.

D. Collect data on the manpower needs and job opportunities of the area.

E. The advisory committee and staff committee along with consultant help will study the collected data.

F. Recommendations will be based on the data collected from student follow-up, the study of manpower needs and the studies made of the local vocational education programs.

Time Schedule

September 20-	Appointment of staff and advisory committee members
January 1, 1970-	Follow-ups completed
May 1, 1970-	Recommendations of committees made to school board
July 1, 1970-	Summary report

SAMPLE PLAN OF ACTION *

Planning an inservice training program for further disseminating the knowledges, skills, and materials obtained.

Present Situation: I am the teacher educator in charge of inservice education at X State University. Part of my work includes directing the program for beginning teachers of vocational education. The beginning teacher program involves a workshop, group meetings, and individual school visitations. I also develop program materials for all of the vocational agriculture teachers in the state.

Desired Situation: Since evaluation is very important for beginning teachers two of the five group meetings for the beginning teachers would be devoted to a study of the evaluation of vocational education. The first meeting would consist of an introduction to evaluation and the presentation of an instrument for the evaluation of vocational education programs. The beginning teachers would administer the instrument, and the second meeting would consist of an interpretation of the results and a further refinement of the instrument. After the instrument had been refined it would be mailed to the two-hundred vocational agriculture teachers in the state, and to all the state level administrators of vocational education. An oral presentation of the evaluation instrument at the Annual Vocational Agriculture Teachers Conference in June 1970 may also be possible.

Procedure:	October 1969	Develop a vocational education evaluation instrument(s) involving both process and product.
	November 1969	Introduce the evaluation instrument(s) to beginning teachers of vocational agriculture at an area meeting.
	January 1970	Beginning teachers administer the evaluation instrument(s) to their students and graduates.
	February 1970	Interpret the findings of the pilot study by the beginning teachers at an area meeting, and refine the instrument(s).
	March 1970	Mail the refined instrument(s) to all teachers of vocational agriculture in the state, and to the administrators of vocational education in the state including the Research Coordinating Unit.
	June 1970	Make an oral presentation of the evaluation materials at the Annual Vocational Agriculture Teachers Conference and serve on a consultant basis during the following year.

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* Adapted from a plan submitted by a teacher educator.

APPENDIX F

COMPLETE TEXT OF FORMAL PRESENTATIONS

THE ROLE OF EVALUATION IN THE DECISION-MAKING PROCESS

by

John K. Coster *
and
Robert L. Morgan

Introduction

The purpose of this paper is to present, and elaborate on, a model for program planning and evaluation. This model casts the State Director of Vocational Education as the chief program manager or decision maker in the State system of vocational education. It also casts the program evaluator in the role of the manager of an information system which is required to provide the decision maker with a means of assessing the efficacy of the course he has chosen in light of the objectives of the program.

In this paper, major attention is given to the role and responsibility of evaluation in relation to national goals and programs. State and local goals are not considered subservient to national goals but must be congruent with them. Congress has outlined the national goals in House Report 1647[1] and Senate Report 1386[2] of the 90th Congress, 2nd Session. The goals of contemporary programs of vocational education, however, are the product of a series of developments. The process of this development began in this decade with the report of the Panel of Consultants on Vocational Education,[3] subsequently manifested in the Vocational Education Act of 1963; reexamined by the

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* Dr. Coster is Professor of Agricultural Education and Director of the Center for Occupational Education, North Carolina State University at Raleigh. Mr. Morgan is a Graduate Research Assistant in Psychology at the Center for Occupational Education.

[1] U.S., Congress, House Committee on Education and Labor, Vocational Education Amendments of 1968 (Washington: Government Printing Office, 1968).

[2] U.S., Congress, Senate Committee on Labor and Public Welfare, Vocational Education Amendments of 1968 (Washington: Government Printing Office, 1968).

[3] Panel of Consultants on Vocational Education, Education for a Changing World of Work (Washington: Government Printing Office, 1963).

Advisory Council on Vocational Education,[4] subsequently redefined in the House and Senate reports, and remanifested in the Vocational Education Amendments of 1968.

The House and Senate reports both clearly indicate that the patterns of vocational education which were instituted by the Vocational Education Act of 1917 and continued through a series of amendments and subsequent acts until 1963 were to be altered with the 1963 act. The House Report stated:

> The conceptual change of the new Act was twofold: (1) vocational education must be redirected from training in seven selected occupational categories to preparing all groups of the community for their place in the world of work, regardless of occupation, and (2) vocational education must become responsive to the urgent needs of persons with special difficulties preventing them from succeeding in a regular vocational program.[5]

The Senate Report stated that:

> The declared objectives of the Vocational Education Act of 1963 was the employment preparation of four groups of people rather than the labor market demands of various occupational categories. It included persons of all ages in all communities of the State -- those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, and those with special education handicaps -- will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training.[6]

Generally, the tenor of the report of the Advisory Council on Vocational Education and the House and Senate reports indicated dissatisfaction with the extent to which the intent of Congress as manifested in the 1963 act had been implemented. Indeed, the Advisory Council stated that there was little indication that either one of the two main purposes had been attained.[7]

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[4] U.S., Congress, Senate, Subcommittee on Education of the Committee on Labor and Public Welfare, Notes and Working Papers Concerning the Administration of Programs Authorized Under Vocational Education Act of 1963, Public Law 88-210 as Amended (Washington: Government Printing Office, 1968). Parts of this report were later published as General Report of the Advisory Committee on Vocational Education. Vocational Education: The Bridge Between Man and His Work.

[5] Committee on Education and Labor, op. cit., p. 1.

[6] Committee on Labor and Public Welfare, op. cit., p. 3.

[7] Committee on Education and Labor, op. cit., p. 2.

The Senate Report indicated that responsibility for failure to meet the intent of the national legislation could be lodged with the U. S. Office of Education, with State Divisions of Vocational Education, and with Congress itself. The Senate Report, for example, states: "However, objectives (referring to the declared objectives of the Vocational Education Act of 1963) are achieved by allocation and application of resources, not by declaration of intent. Neither 'carrots' nor 'sticks' were provided to influence expenditure patterns."[8] The Senate Report goes on to call attention to the fact that the 1963 act provided maximum flexibility in meeting modern needs for vocational education, but that it did not provide safeguards to insure that the needs of American young people would be met.[9]

Federal expenditures for vocational education were quadrupled as the result of the Vocational Education Act of 1963, with expenditures increased from $57,027,000 in 1964 to $233,794,000 in 1966. With this increase in expenditure, however, there was not an accompanying increase in enrollment in vocational education programs.

Despite criticism directed toward the performance of vocational education in meeting the intent of Congress, the Senate Report expressed confidence in vocational education and vocational educators:

> The capacity of traditional vocational programs to cope with these facts of life is doubted by many educators. Some have suggested that vocational education no longer has reason for being. The committee disagrees with those who see no future in vocational and technical education. The committee believes that Nation's educators can bring about the changes in vocational and technical education which will make those programs fill what seems to be a void in the future of our education system.[10]

National Goals

The national goals for vocational education, as they have been expressed by Congress, are both explicit and implicit. The explicit goals are stated in the declaration of purpose of the Vocational Education Amendments of 1968:

> It is the purpose of this title to authorize Federal grants to States to assist them to maintain, extend, and improve existing programs of vocational education, to develop new programs of

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[8] Committee on Labor and Public Welfare, op. cit., p. 3.

[9] Ibid., p. 16.

[10] Ibid., p. 9.

> vocational education, and to provide part-time employment for youths who need the earnings from such employment to continue their vocational training on a full-time basis, so that persons of all ages in all communities of the State -- those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, those with special educational handicaps, and those in postsecondary schools -- will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training.[11]

The implicit goals may be inferred from the reports of Congress. The Senate Report stated that "The immediate motivation for the 1963 act was the high level of unemployment among untrained and inexperienced youth. Longer term criticism alleged a failure to change occupational emphases in keeping with an increasingly sophisticated technical economy. More dimly recognized, but implicit, was the growing need for formal preparation for employment."[12] The House Report stated: "The Vocational Educational Legislation that we report today includes many features which will assist our society in that task of becoming a greater and more progressive nation."[13]

It seems clear that Congress intends that opportunities for training be provided for all persons who do not plan to attend college and who can profit from such training, within the ability of Congress to provide the necessary funds. And further it seems clear that Congress intends that this training for sub-professional occupations shall be at a level of quality equivalent to that offered in schools for students who are proceeding toward college. The goals of vocational education which relate to adequate and appropriate preparation for employment are closely related to the national goals of alleviating poverty, minimizing unemployment, and maximizing the productive contribution of each member to society.

The legislation that marked the end of a first era and the beginning of a second era in vocational education, clearly has emerged from the consideration of the needs, interests, and abilities of the individual and the contemplation of the occupational demands of society. There is no question that vocational education has been launched into the vanguard against poverty. There is no question that Congress will not be satisfied with either the pouring of old wine into new bottles or new wine into old bottles. Congress is demanding both new wine and new bottles. The Vocational Education Amendments of 1968 provide safeguards to insure that the intent of Congress is met. And at the risk of anticipating the strategy of Congress it seems reasonable to assume that unless vocational education can function as a viable mechanism in achieving national goals, other programs will be developed which will be addressed toward these goals.

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[11] Vocational Education Amendments of 1968, Public Law 90-576, Part A, Sec. 101.

[12] Committee on Labor and Public Welfare, op. cit., p. 3.

[13] Committee on Education and Labor, op. cit., p. 3.

A Model for Planning and Evaluation

Let us turn now to a consideration of a basic model for program planning and evaluation which will be useful not only to the decision maker but also to the evaluator. Already we have discussed two elements of the model. The first element is the attribute system of the individual, his needs, interests, and abilities. All of the official reports issued during this decade refer abundantly to the significance of the individual and to planning educational programs which will enhance the development of his career. At the same time the programs are rooted in the occupational demands of society, the second element in our model. Vocational education is seen as a moving force which will function in the reconstitution of society to the extent that the well-known ills of society will be alleviated and its productiveness increased.

From the twin sources of the individual attributes and the needs of society, the broad goals of vocational education are specified, albeit somewhat by inference. These goals must be translated into more specific objectives. The specificity and nature of the objectives differ with the level of operation and it may be desirable to examine a wide range of objectives in order to develop those objectives which are most congruent with the goals at the state and national level. Once the objectives are specified, the operational procedures and resources required to attain the objectives may then be determined. The operational procedures and resources constitute the technology of education; the combination of human resources, hardware, and software which are needed in an appropriate mix to insure the attainment of the objectives. Included also in the technology is the know-how by which these resources are mixed and applied. The methodology, the emphases, the curriculum, and the materials all form part of the technology of the educative process. Finally, of concern to both program planning and evaluation are the actual outcomes, or products, of the program. Thus, the planning and evaluation model requires attention to seven principal components:

(1) The value structure of a given society, including the social, economic, and political structure in which educational programs are developed and implemented.

(2) The clientele and the attributes of the clientele for which programs are designed.

(3) The goals of the program, which are a manifestation of the combined mix of the value structure of society and the attributes of the individual.

(4) The objectives of the program.

(5) The operational procedures -- i.e., the methods, techniques, emphases, and efforts -- being utilized to attain the objectives.

(6) The resources -- both material (including facilities, equipment, and materials) and human (including teaching, administrative, supervisory, service and special staff) -- provided to facilitate the attainment of the objectives.

(7) The actual outcome or products of the program, as defined in terms stated in the objectives of the program.[14]

The interrelationship of these components is illustrated in Figure 1.

The planning and evaluation model may be employed at any level. It can be used to evaluate the efficiency of a single program of instruction, or a program at the local, state, or national level. For this presentation we are concerned primarily with the operation of this system at the State level. Thus far we have discussed the problem in terms of meeting national goals. State goals, or even local goals, may be added to the national goals. If the program is to be supported by funds appropriated from national legislation intended to attain national goals, neither state nor local goals can be substituted for national goals; they may be added to national goals. Thus the goal system may include not only that which is defined in terms of national goals but also additional goals which may relate to strategies for increasing the State's economy or alleviating dropout rates. Obviously, the State Board for Vocational Education and the Advisory Council for Vocational Education will be instrumental in defining the goal system for vocational education for a state.

Now let us examine the evaluation portion of our model. The evaluation may be directed toward an appraisal of the process of the program, that is, toward an appraisal of the operational procedures

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[14] Coster, J. K., F. J. Woerdehoff, and N. J. Nelson, A Bidimensional Approach to Educational Appraisal, Studies in Education, No. 3 (Lafayette, Ind.: Division of Education, Purdue University, 1960). Adapted from C. W. Harris, "The Appraisal of a School -- Problems for Study," Journal of Educational Research, 41:172-182, November, 1947.

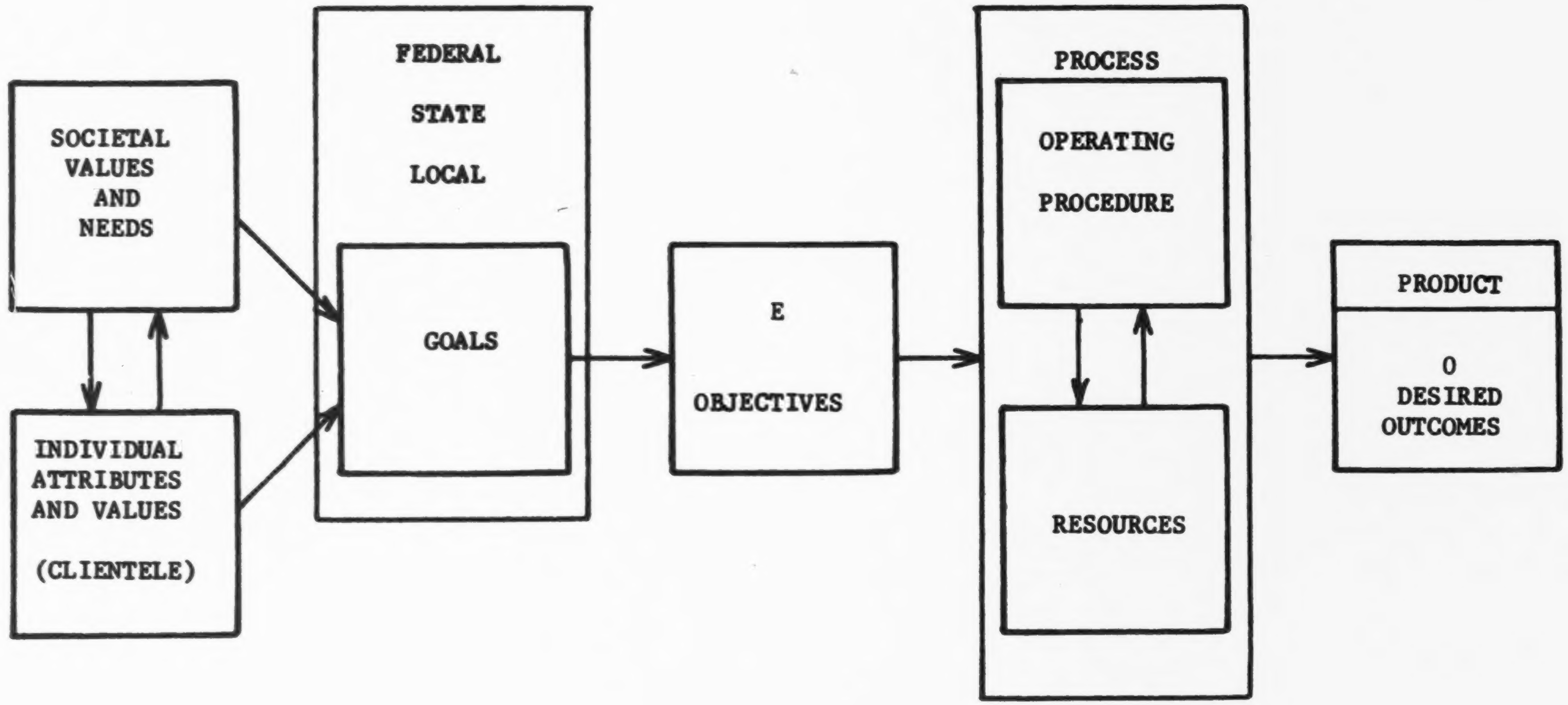
SOCIETAL
VALUES
AND
NEEDS
INDIVIDUAL
ATTRIBUTES
AND VALUES
(CLIENTELE)
FEDERAL
STATE
LOCAL
GOALS
E
OBJECTIVES
PROCESS
OPERATING
PROCEDURE
RESOURCES
PRODUCT
0
DESIRED
OUTCOMES

FIGURE 1

A PLANNING AND EVALUATION MODEL

and the resources available to operate the program and to attain the objectives. Or, evaluation may be directed toward an assessment of the actual outcomes or product of the program. Traditionally, the major emphasis on evaluation has been on the process evaluation.

> Evaluative criteria and accreditation are based on a tacit assumption of high positive correlation between the process and product of vocational education. Value judgments are used extensively in application of process evaluative criteria and accreditation standards. Although the value judgments are based on experience and expertise, although they are based on the best evidence available as to what constitutes "good" or "sound" programs, and although they provide a motivation for program improvement, they are generally more subjective than objective and they generally do not provide for quantification of qualitative data. There is little or no evidence that the assumption of correlation between process and product variables is valid.[15]

It may be desirable to have information regarding the training and experience of teachers, the hardware and software available for the instructional program, the ratio of guidance counselors to student enrollment, and the size of classrooms and shops. However, such information *per se* does not insure that the objectives of the program have been attained.

The assessment of the product of vocational education is more difficult to perform. Relatively few follow-up studies have been conducted, and in relatively few instances is there an adequate subsystem for placement and follow-up in the vocational education systems at either the state or local levels. Yet the crux of the evaluative problem is the congruence between the actual outcomes of the program and the objectives of the program. The prime concern of the decision maker is the extent to which these two entities are in juxtaposition. The prime function of an evaluation program is to produce the information necessary to determine the extent to which these two entities are in accord. Therein lies the key to the role of evaluation in the decision-making process.

Now we shall examine the planning and evaluation model in relation to the decision maker and program manager. To do this we must integrate the decision maker into the model. This is shown in Figure 2. We have introduced the decision maker and program manager at two points in the model. First, the decision maker has been introduced between the goals and objectives in this model to denote his administrative function. Essentially this illustrates that the decision maker is responsible for specifying those objectives congruent

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[15] Coster, John K., and Loren A. Ihnen, "Program Evaluation," *Review of Educational Research*, 38:429-430, October, 1968.

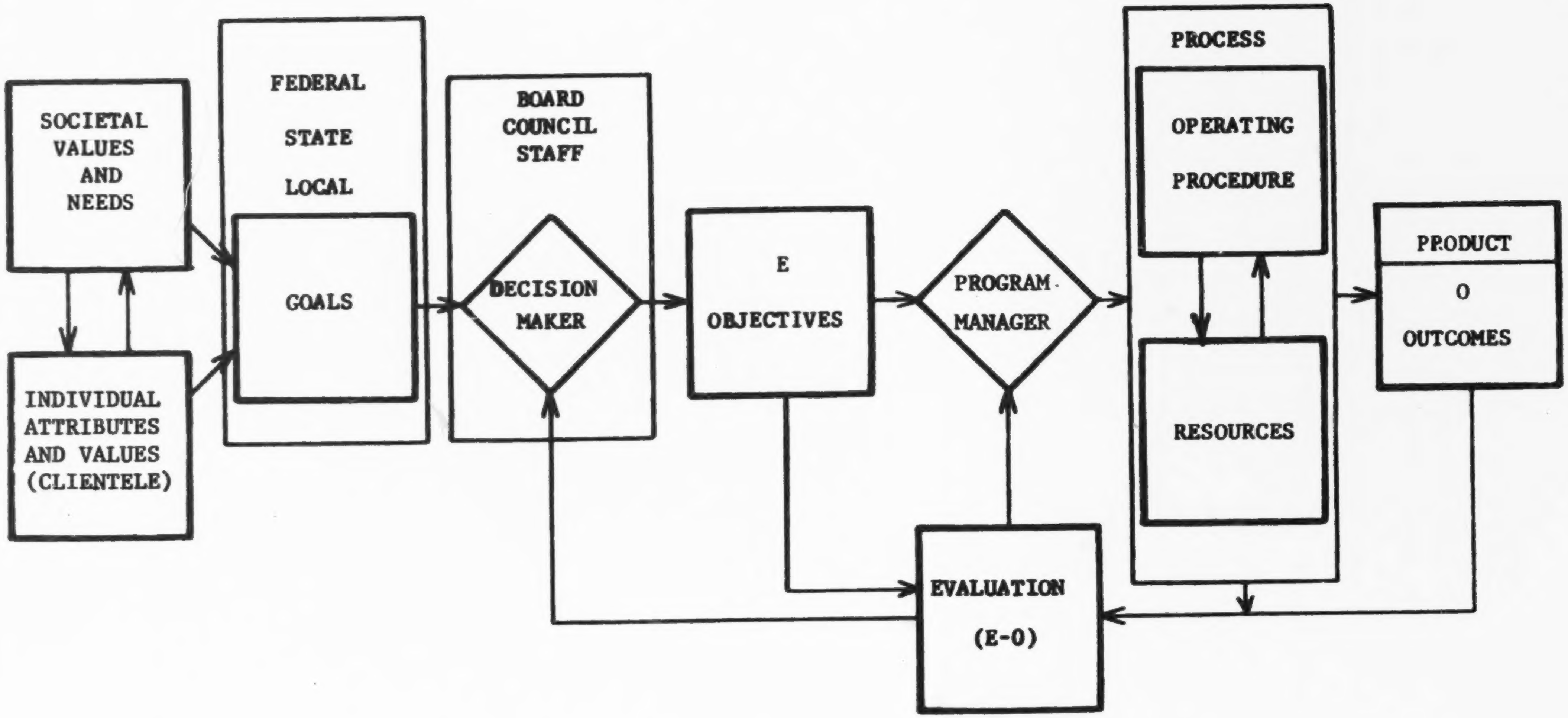
SOCIETAL VALUES AND NEEDS
INDIVIDUAL ATTRIBUTES AND VALUES (CLIENTELE)
FEDERAL
STATE
LOCAL
GOALS
BOARD COUNCIL STAFF
DECISION MAKER
E
OBJECTIVES
PROGRAM MANAGER
PROCESS
OPERATING PROCEDURE
RESOURCES
PRODUCT
O
OUTCOMES
EVALUATION
(E-O)

FIGURE 2

AN EXPANDED PLANNING AND EVALUATION MODEL with the goals, and harmonious with the policies, set forth by the State Board for Vocational Education. Second, we have introduced the program manager at a point between the objectives and the process or operational procedures and resources, to denote his implementive function. Here we have indicated that the function of the program manager is to design the strategies for the attainment of the objectives within the goal structure for vocational education in the state.

Strategy is defined as a plan for attaining a goal. Following the statement found in the Senate report, " . . . that objectives are achieved by allocation and application of resources,"[16] the argument may be advanced that the decision maker assures the attainment of the objectives through the allocation and application of resources represented by the process of vocational education. In other words, he must decide how to allocate the resources available to him in order to maximize the probability that the objectives will be attained. The decision maker has one other responsibility in relation to the administrative function. He must order the objectives into a hierarchy based upon their relationship to the goals of the program. In the strategy for program planning and evaluation it is axiomatic that the decision maker must have the necessary flexibility for determining alternatives and applying resources to insure that the objectives which rank high in utility for the program are attained. This alternative includes the provision for terminating programs which do not contribute to the attainment of objectives which have been assigned a high order of priority. In order for this system to function efficiently it is essential that the policies of the State Board for Vocational Education clearly assign this responsibility to the decision maker or program manager.

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[16] Committee on Labor and Public Welfare, op. cit., p. 3.

The Role of the Evaluator

In order for this model to function effectively, a management system must be instituted which will provide the necessary information upon which decisions may be based and alternatives examined and selected. The operation of this management system is the responsibility of the evaluator. Primarily, the evaluator is concerned with obtaining information regarding the magnitude of discrepancy between objectives, which are the expected outcomes, and products, which are the actual outcomes. Thus he works immediately with the entity (E - 0), where "E" is the expected outcome as defined by the objectives, and "0" is the observed product. Figure 2 shows how the entity (E - 0) is introduced by feedback loop into the decision-making process both prior to and subsequent to the possible redefining of objectives.

If (E - 0) exceeds minimum tolerances, then basically there are two alternatives available to the decision maker. First he may examine the process subsystem with particular attention to the reallocation of resources to that subsystem in order that the process may be changed to maximize the probability that the objectives will be obtained and to minimize the entity (E - 0). Stated otherwise, he treats objectives as fixed and changes the rosource allocation to maximize the probability of success in attaining the objective.

The second alternative is to change the objectives. The objectives may be unrealistic, especially in light of the resources available to attaining the objective. This alternative is much less desirable if the changes take place as the result of evaluation. There is, however, an exception to this generalization. The order of priority of objectives may be changed, based on the evidence collected by the program evaluators. Suppose, for example, an objective has been defined as that of increasing the proportion of students in secondary schools enrolled in vocational programs from 25 per cent of the student body to 50 per cent of the student body by 1972. Again, suppose the data collected indicate that only 35 percent of the students are actually enrolled in vocational programs. Here the program manager may put his research team to work. He may wish to determine why the resource allocation subsystem, that is, the process of vocational education, has not generated the desired increase in enrollment in secondary programs. The evidence collected may demonstrate that the power structure operating on the public schools militates against the expansion of programs of vocational education at the secondary school level, or it may indicate that the guidance subsystem operating in the secondary schools is not functioning adequately. A decision may be reached that the objective of increasing the secondary school enrollment to 50 per cent may be assigned a lower order of priority and the objective of increasing enrollment in postsecondary schools may be assigned a higher priority. The shift in objectives, then, may lead to a shift in resource allocation, with a larger portion of resources being allocated to attain the objective of increasing the enrollment in postsecondary institutions in accordance with the predetermined objectives.

Decision-Making

Thus far we have discussed two concepts relevant to the decision-making process. One concept relates to the probability of the success of attaining the objective. The second concept relates to the utility function of the objective.[17] The decision-making process seeks to maximize both entities, that is, to maximize the utility and the probability. Employing mathematics, we can obtain an indication of the effectiveness of the program and the decision-making process by assigning values, ranging from 0 to 1, to the probability of success and to the utility of the objective, and summing the products over the number of objectives which have been specified for the program. This procedure represents a simple approximation of the relative efficiency of the program, and provides an input to the decision maker to inform him of how effective the operation of the program is in relation to the actual outcomes of the program.

Regardless of whether or not we apply the mathematical model to the problem, we can express these notions verbally. For each objective we can determine the probability of success within a specified period of time and the probable utility of the objective. If the objectives have been ordered into a hierarchy, then we can determine whether the higher order objectives have a high probability of success and whether the utility of these objectives is relatively high. This information will be generated by the program evaluator and supplied to the decision maker to assist him in allocating his resources to maximize the probability that those objectives high in utility are being attained.

The probability of success and the utility of attaining an objective need further amplification. The values for probability for success and utility, which can range from zero to one, are set by the decision maker prior to application of resources. The values then become a basis upon which resources are applied. The probability of success simply represents an estimate of the probability that the actual outcome or product of a program will approximate the objectives, or desired outcomes of the program.

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[17] Edwards, Ward, "Subjective Probabilities Inferred from Decisions," Psychological Review, 69:102-135, 1962. The decision-making process discussed in this paper is an adaptation of the Subjective Expected Utility Model developed by Edwards. For a more advanced treatment of underlying mathematical principles, see W. Edwards, H. Lindman, and L. J. Savage, "Bayesian Statistical Inference for Psychological Research," Psychological Review, 70:193-241, May, 1963.

If the decision maker wishes to play it safe, he can allocate his resources to ongoing programs that have fully demonstrated their success. The probability that these ongoing programs will attain the objectives set for them is relatively high, approaching the upper end of the continuum. New programs are more risky. They involve two kinds of risks. First, they involve a risk because the actual outcomes are unknown. They may be unknown due to lack of specificity as to the operational procedures and resources needed to attain the objectives. Second, there is a risk in disturbing the status quo of the entire system. Existing programs may be firmly entrenched in the system, and reallocation of resources may represent a threat to the operation of existing programs. Political pressures to continue operation in the ongoing pattern may also be great. Thus the decision maker may be unwilling to substitute a high-risk program for a low-risk program when the probability for success may be lower and the pressures to maintain the status quo may be high. Inertia is a powerful barrier to increasing the accessibility of programs of vocational education for all persons in a community.

Concomitant with the probability of success of attaining an objective is the utility factor of the attainment of the objective. Utility is related to the goals of the program. As goals shift, so do the utility loadings for the specific objectives. Probability of success and utility are not necessarily related and they may be diametrically opposed. New programs may have a relatively low probability of success initially but a relatively high utility loading. Programs that have outlived their usefulness may have a high probability of success but a relatively low utility rate. Here is where the decision maker demonstrates his mettle, especially if he is faced with the allocation of scarce resources. He can play it safe, maintain the status quo, maximize the probability of success, and largely ignore the utility loading in relation to changing goals. Such an alternative maximizes the stability and political security, at least for those within the system who are likely to be affected by a shift in objectives and reallocation of resources. Progress, however, is not made by playing it safe. Utility rates higher, in the long run, than probability of success. Where (E - O) in the model is high, which indicates the success factor is not high, then resources for research may be applied to ascertain what changes need to be made in the operational system to increase the probability of success.

There are a number of dimensions of utility to be considered which may be in conflict. The first is utility in relation to goals. If the goal is to maximize the educational opportunities for all persons in a community, then objectives which lead to expansion of programs and redirection of resources to meet the needs of the maximum number of individuals will rate high in utility. The second is economic utility. Given a choice of alternatives, the objectives which lead to training persons for high skill occupations which pay high wages will increase the economy of the community or of the state. The decision maker may not greatly improve the economic welfare of the state by allocating his resources to training persons for low paying occupations. The economic productivity of the state is increased where industrial complexes are attracted which require high salaried skills. The third is social utility. Social utility takes at least two directions. One direction relates to the contribution the employee makes to the social welfare of society. An example is health occupations, which generally are not high paying occupations. The trained manpower in health occupations is essential to maintaining high standards of health in a community, a state, or a nation. Investments in training for health occupations may not produce dividends in terms of increasing the economy of the state but they may produce dividends in terms of maintaining the health of persons in the community. A parallel case can be made for training persons, such as low literate adults, for semiskilled occupations. Again, these occupations may not enhance the economic growth rate of the state, but investments in training for these occupations may have other values, such as increasing the self respect and esteem of the individual, and reducing welfare costs.

We can apply the probability of the success-utility model for decision-making to research projects. A research project may have a high probability of success from the standpoint of adequacy of design and execution, and a relatively low utility factor, where the information produced may add very little to improving or changing programs of vocational education. Or, a research project may have a low probability of success due to inadequacy of design or execution, and a high utility rating due to its potential contribution to producing knowledge useful in inventing new solutions to long-range operational problems of vocational education. Obviously, both probability of success and utility must be maximized if research is to be of value. Basic research initially may have a low probability of success and a low immediate utility, but through replication the probability of success may be increased and ultimately the utility may be extremely high. "Safe" projects generally rank high in probability of success and low in utility, whereas "risk" projects may rank low in probability of success initially but may have high ultimate utility value. In research, as in program planning and evaluation, high risk often leads to progress.

Recapitulation

We now turn to a recapitulation of the planning and evaluation model, the decision-making process, and the role of the evaluation in the decision-making process. Federal funds available to states through the Vocational Education Act of 1963 and the Vocational Education Amendments of 1968 are intended to be directed toward the attainment of explicit and implicit goals set by society through its duly constituted representatives. These goals are based on the value system of society and the attribute systems of individuals. The intent is that vocational education programs produce a supply of skilled manpower and add to the increments for knowledge and skills which will enable the maximum numbers of persons to participate effectively in the economic productivity of society. Emphasis has been placed upon serving those persons who are disadvantaged or handicapped. These groups represent a subpopulation upon which high priority has been placed.

National goals may be augmented or modified by state and local goals. However, acceptance of federal funds which are directed toward broad national goals is tantamount to accepting the goals which are expressed in the legislative mandates and supporting documents. Objectives, then, are specified in light of the national goals, modified by the state goals. The specification of objectives is the responsibility of the decision maker. Resources are allocated to maximize the attainment of the objectives. The resource allocation refers to the technology of education, that is, to the combination of human resources and hardware and software, as well as facilities, which are essential to the attainment of the objectives. Objectives are assumed to be hierarchial in nature, that is, they can be ordered in a hierarchy ranging from the most significant to the least significant objectives in light of goals. Outcomes are defined in terms of the extent to which the objectives have been attained. The evaluation process is directed toward determining the degree of congruence between the objectives and the actual outcomes. The evaluation constitutes an input into the decision-making process. The decision-making process functions in terms of specifying the objectives and allocating the resources. If the discrepancy between objectives and actual outcomes is high, then the resource allocation system must be reexamined and decisions made regarding how these resources can be reapplied to insure the attainment of the objectives.

Summary

The chain of events initiated by the report of the Panel of Consultants on Vocational Education in 1963, which led to the enactment of the Vocational Education Act of 1963 and culminated in the enactment of the Vocational Education Amendments of 1968 has had a profound influence on the office of the State Director of Vocational Education. These events have established this position as one of educational statesmanship. Not only have the decision-making and managerial aspects of this position been increased in geometric proportions, but also the responsibilities for changing programs in accord with changing goals has presented a difficult task. Not the least of these is program planning and evaluation. Inputs must be provided into the decision-making process, and accountability for funds dictates that the decision-maker must have access to a highly qualified staff, the need for which was not recognized a decade ago. Evaluation is an exceedingly complex activity, requiring much more attention than it has received in the past. At this stage in development, evaluation must be considered as a high risk activity. The model that has been presented, for example, is a conceptual, logical model which requires considerable work for its implementation. Yet it does provide a way of examining the complex of activities which are involved in program planning and evaluation; it demonstrates a position of the decision maker and program manager within the model, and it indicates in broad terms the information that must be provided by the program evaluator to the decision maker if appropriate alternatives are to be selected, objectives attained, and goals realized. The decade of the 60's has witnessed a phenomenal advance in educational technology. The management of the technology in terms of applying resources to attain objectives and realize goals must advance with the technology. The head of the program must be a rational man who can make decisions that will maximize both the probability of success and the utility of attaining objectives. The role of evaluation in the decision-making process is to design, direct, analyze, and report the necessary data on which decisions may be made. Thus evaluation is not merely essential, but absolutely mandatory as a key element in progress and goal realization.

THE SCOPE AND OBJECTIVES OF VOCATIONAL EDUCATION AND THEIR RELATIONSHIP TO EVALUATION

by

Edwin Crawford*

I. The Scope and Objectives of Vocational Education

The Vocational Education Amendments of 1968 contain a Congressional mandate for vocational education to redirect, expand and refocus its scope and objectives.

A. The 1968 Amendments reinforce the Act of 1963 with respect to requiring vocational education to redirect its efforts to serve the needs of people as individuals, instead of merely providing for the training in certain occupational categories to meet manpower requirements.

B. The increased funding and program authorizations contained in the Amendments broaden the areas in which vocational training may be offered and increase and specify additional people who may be served.

C. Set-asides for the disadvantaged, the handicapped and post-secondary education, plus the separate authorizations for special programs reemphasize major Congressional priorities and concerns regarding vocational education.

D. New and expanded involvement of the private sector in every phase of the educational process is another expression of Congressional emphasis.

E. Vocational educators are being asked to develop a planning, programming and evaluation system that will ensure that Federal funds are being spent in the most effective and efficient manner possible. Accountability is no longer implied; it is now required.

II. Relationship of Program Objectives to Evaluation

A. The main purpose of vocational education evaluation as is the case in any evaluation, is to measure the effectiveness and efficiency of vocational education programs, services, and activities in terms of prescribed objectives and criteria.

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B. Evaluation is invaluable to vocational educators from a functional viewpoint, such as assisting them to:

1. meet legislative requirements for annual descriptive, statistical and financial reports;

2. provide feedback for future program planning and development - to close the loop in the planning process;

3. improve management and administrative decision-making;

4. determine additional vocational education research needs;

5. suggest needed legislative changes;

6. reveal gaps in program coverage and to fulfill the unmet needs of students, business and industry and labor;

7. discover exemplary programs, services and activities;

8. uncover program alternatives for accomplishing prescribed objectives; and

9. disseminate findings for the edification of all concerned with vocational education.

C. The greater specificity required by the 1968 Amendments regarding the identification of annual and long-range program needs and objectives in vocational education requires much more sophisticated planning, programming and evaluation systems than ever before.

1. The 1968 Amendments and the accompanying guidelines and regulations require that vocational education objectives be stated in every State Plan in terms of specific target groups, target areas and program emphasis to be served, as follows:

   a. target groups, such as:
      1. the disadvantaged
      2. the handicapped
      3. secondary education
      4. postsecondary education
      5. adult education

   b. target areas, such as:
      1. economically depressed areas
      2. areas of high general unemployment
      3. areas of high youth unemployment and dropouts/forceouts
      4. densely populated areas

c. program emphases, such as:
    1. exemplary programs and projects
    2. consumer and homemaking education
    3. cooperative education programs
    4. work-study programs

2. States are required to evaluate their programs quantitatively and qualitatively in terms of specific objectives at the local, state, and Federal levels, as set forth in their State Plans.

3. Types of information to be evaluated
    1. Program objectives
    2. Program plan
    3. Program process
    4. Program organization and administration
    5. Program product
    6. Program alternatives

III. Specific and Differing Objectives of Evaluation at the local, state, and Federal levels

A. Concerns at various levels

1. Evaluation at the local level by necessity must be in terms of very specific objectives and is usually conducted by examining specific programs, school by school.

2. Evaluation at the state level is primarily concerned with setting objectives in terms of funds and resources available and in developing standards or criteria for measuring accomplishments in relation to the allocation of these resources.

3. Evaluation at the Federal level is primarily concerned with the development and implementation of a National evaluation program which must assess accomplishments and deficiencies in all aspects of vocational education, in all states and for all students, in terms of National priorities and objectives prescribed by law.

B. The planning and evaluation requirements in the 1968 Amendments add a new dimension to Federal - state - local relationships through increased joint responsibility for program improvement. It is therefore more important than ever to achieve optimum cooperation, involving the general public, the private sector and other public agencies wherever possible.

C. Both vocational education objectives and the tools of evaluation need refinement. This year local, state, and Federal vocational education officials, working under a tight time schedule, developed Rules and Regulations and a State Plan Guide, as well as the State Plans themselves. Next year, these instruments will undoubtedly require further refinement, and more sophisticated information and detailed justifications will probably be expected to support more adequately National and state allocation of resources.

IV. Some Basic Considerations in Evaluating Vocational Education Programs

A. The seriousness of Congressional concern and intent relating to the development and implementation of a planning and evaluation system which meets prescribed specific objectives is reflected in the many direct and indirect references to evaluation, interspersed throughout the 1968 Amendments. The following represent the more significant references:

1. SEC. 102(c): Specifies that funds for evaluation and dissemination activities required pursuant to Title I are authorized.

2. SEC. 104(a)(2): The National Advisory Council on Vocational Education is to review the administration and operation of vocational education programs, including their effectiveness, and make annual reports of its findings and recommendations; and, it shall conduct independent evaluations of programs.

3. SEC. 104(b): State Advisory Councils are also to evaluate vocational education programs, services and activities and prepare an annual evaluation report based on the program objectives set forth in their state's long-range and annual program plans.

4. SEC. 122(a)(8): State grant funds may be used for periodic program evaluation of ancillary services and activities to assure quality in all vocational programs.

5. SEC. 123(a)(6)(A): In determining the distribution of funds to local educational agencies and their use by local educational agencies, due consideration will be given to the results of periodic evaluations of state and local vocational education programs, services and activities in the light of information regarding current and projected manpower needs and job opportunities.

6. SEC. 132(6)(C): Funds for research and training programs may also be used for projects to evaluate the operation of programs for the training, development, and utilization of public service aides, particularly their effectiveness in providing satisfactory work experiences and in meeting public needs.

7. SEC. 143(a)(2): Exemplary program and project funds may be used to pay all or part of the cost of evaluating exemplary programs or projects.

8. SEC. 161(b): Consumer and homemaking education funds will be expended for ancillary services, activities and other means of assuring quality in all programs, such as program evaluation.

9. SEC. 173(a): Cooperative vocational education programs must provide funds for ancillary services and activities, such as evaluation.

10. SEC. 191(c)(1): Curriculum development funds shall be used to evaluate curriculum materials and their uses.

11. Title III, SEC. 303(a), (4) and (6) directs the Commissioner of Education to collect data and information on programs qualifying for assistance under programs administered by him for the purpose of obtaining objective measurements of the effectiveness achieved in carrying out the purposes of such programs.

B. The Guide for the Development of a State Plan for the Administration of Vocational Education under the 1968 Amendments includes many suggestions relating to evaluation such as:

  I. Part I - Administrative Provisions

    a. SEC. 1.5 - Program evaluation asks the states to describe how the periodic and continuous evaluations of the state and local programs, services and activities will be carried out under the State Plan, indicating both the frequency of such evaluations at both the state and local levels and the procedures by which such evaluations will be conducted.

    b. Other sections ask questions relating to evaluation, such as:

      1. how the State Board will provide for effective use of results and experiences of the "special programs";

    2. how target areas, such as areas designated as economically depressed or high unemployment areas, will be determined;

    3. how target groups, such as handicapped persons, will be identified;

    4. how consideration will be given to manpower needs and job opportunities in determining allocations of funds to the various purposes in developing an annual program plan;

    5. how the State Board will determine the relative priority of local applications.

2. Part II - Long-range Program Plan Provisions

    a. In developing a long-range plan for vocational education for fiscal years 1970 through 1974, identification and quantification of population characteristics data are required, such as:

        1. the composition of the general population - urban, rural and race; and

        2. the age distribution and school enrollment at the secondary, postsecondary, and adult levels.

    b. Target geographic areas to be considered include:

        1. economically depressed areas;

        2. areas with high rates of youth unemployment;

        3. areas with high rates of school dropouts; and

        4. areas with great population densities.

    c. Measurable objectives relating to secondary, postsecondary level programs would include:

        1. percentage of students at each level enrolled in vocational education;

        2. percentage of students available for work placed in jobs following training;

        3. reduction of barriers between vocational and general education;

        4. number of cooperative and work-study programs.

        5. extension and improvement of guidance and counseling services; and

        6. improvement in the articulation between elementary, secondary and postsecondary education programs.

    d. Measurable objectives which relate to programs for disadvantaged and handicapped would include:

        1. percentage enrolled in vocational education programs;

        2. percentage placed in jobs or postsecondary programs;

        3. number of such students in both "special" and "regular" programs; number of students moved from special to regular programs; and

        4. improvement in ancillary services designed specifically for such students.

3. Part III - Annual Program Plan

    a. The annual program plan asks that states set forth:

        1. tables, showing proposed allocations of funds to identifiable programs, services and activities.

        2. tables, summarizing estimates in instructional programs:

            a. enrollments
            b. characteristics of persons to be served
            c. staff resources, and
            d. administrative and other related ancillary support services, including evaluation.

    b. Narrative explanations and supporting justifications of fund allocations for programs, services and activities are also to be provided in this part, including a justification of funds allocated for evaluation.

V. Conclusions

A. New legislation requires the development of comprehensive planning, programming and evaluation systems at the Federal, state, and local levels; such requirement should serve as a springboard for program development and improvement.

B. The prescribed program objectives are stated in terms of target groups and target areas to be served, thus reflecting special priorities to be emphasized.

C. The implications of the Congressional mandate for evaluation are clear, many, and in some instances, complex. The effectiveness of current programs and the satisfaction of individual students require that we learn and implement those procedures and techniques that will most efficiently aid the planning and programming process for the attainment of local, state and National objectives.

D. The various levels of government should share the same concerns and priorities regarding planning and evaluation, for their cooperative efforts are vital to the development and implementation of valid, effective programs of vocational education to meet the needs, interests, and abilities of all the nation's youth and adults.

A SYSTEM FOR STATE EVALUATION OF VOCATIONAL EDUCATION

by

Harold Starr*

The Center for Research and Leadership Development in Vocational and Technical Education at The Ohio State University is developing a model evaluation system for use by state vocational education agencies. This system is designed to be used in the administrative mainstream as a management tool for contributing essential information for planning and redirecting state vocational education agency programmatic efforts. The evaluation system is also designed to provide states with instruments and procedures to evaluate program effectiveness in order to meet the accountability requirements set by state vocational education agency governing boards, state legislatures, and the public.

In developing the evaluation system, project staff took into consideration the importance of the periodic evaluations of vocational education at the national level called for in the National Vocational Education Act and the need to respond to the data reporting requirements of the U. S. Office of Education. Thus, The Center, by achieving its aim of developing an evaluation system for state level usage, will provide a vehicle whereby essential information can be continuously collected and interpreted and made readily available to governmental agencies and the public. The evaluation system will also provide essential information to decision makers in state vocational education agencies to assist them in developing annual and long-range program plans.

Selection of the Evaluation Method for the Model

The evaluation methodology that has been widely used by state agencies is a type of process evaluation which focuses on the assessment of organizational structures, educational processes, equipment and facilities. These process evaluations have usually assessed the adequacy of program components against arbitrary standards without reference to program outcomes. Assessments of adequacy are arrived at through the use of judgmental procedures and the use of "expert" raters. This form of process-oriented evaluation has a useful function; however, evaluation information derived from carrying out such process evaluation is not sufficient for assisting vocational education agencies in decision making relative to state vocational education agency program planning or for providing data to meet accountability requirements. Another reason for our not emphasizing process evaluation is the fact that this methodology does not

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concern itself with product data for gauging program effectiveness. Process evaluation methodologies also require extensive local school visitations in order to secure evaluation data about programs, equipment and facilities. These visitations make state level evaluation difficult to conduct on a continuous basis because of the number of manhours and the number of personnel required to complete the evaluations. In addition, process evaluation methodologies fail to provide the types of quantitative data indicators which signal the need for state level program redirection.

State vocational education agencies have used process evaluation results to justify the existance of programs, state expenditures to local programs, and state agency budgetary requests for personnel and financing. One reason that state vocational education agencies may require an alternative evaluation strategy is related to the credibility of process-oriented results for justifying such budgetary requests. Vocational education now finds itself having to compete with other agencies and institutions for limited resources at both state and local levels. Decisions regarding resource allocations by policy-making bodies are being based with increasing frequency on evidences of program efficiency, program effectiveness, program relevance to changing social and economic conditions, and the degree to which agency programmatic direction reflect community, state, and federal interests and concerns. To this end, the demand of policy-making bodies has been for more information in terms of programmatic effectiveness and the extent to which state agency efforts relate to larger social concerns. Since process evaluation of vocational program efforts fails to provide evidences related to either of these concerns, it cannot be used as a viable strategy for conducting state vocational education program evaluation.

The formulation of all-inclusive data banks as an approach to evaluation has enjoyed popularity during the past decade. In this methodology, quantities of data are collected and included in the bank because these data appear to have logical relevance to decision-making requirements. Typically no systematic attempt is made to determine, a priori, critical data elements required for program planning or accountability. Instead, the data accumulated within the data bank are often designed to be sufficiently extensive in scope that there would be a high probability for state agency decision makers to retrieve the necessary data to permit them to respond to current and future information demands.

This approach to providing decision-making information to program planners has its drawback. Data banks which are so organized in the hope of meeting future decision-making information requirements and which are not logically evolved out of specific decision needs may not contain needed information when required. Furthermore, there is the tendency for all-inclusive data banks to require the securing and storage of masses of unused data in order to meet the uncertainties of future information requests. As the data base enlarges, the problems of securing information from local courses becomes more difficult, and serious information flow problems may result.

The all-inclusive data bank methodology was, therefore, rejected by project staff as a viable and efficient strategy for conducting state vocational education agency program evaluation.

The project staff concluded that an evaluation methodology which has greater payoff for state vocational education agency program planners in terms of program planning and accountability purposes would be a methodology which is consistant with a systems approach to planning, contains process elements, but is oriented primarily toward product or outcome measures. Such a systems approach to evaluation methodology would require that: (1) the evaluation problem be defined in terms of its purposes and expected outcomes; (2) a measurement system would be formulated from the types of decision requirements which are logically derived from the purposes of the evaluation; (3) proper feedback or quality control mechanisms would be provided to continuously assess the effectiveness and efficiency of the information system in providing significant decision-making data; (4) an interpretive system would be formulated which could analyze and provide information to decision makers in a format which would facilitate decision-making; and (5) since the evaluation system is only one part of a total program planning system, careful attention would be directed to assuring that the evaluation system could be articulated with other components of a systematic program planning process.

Personnel

Because of the nature of the study, it was desirable to have the significant involvement of agencies, groups and individuals external to The Center. These sources were required to assure the development of realistic evaluative instruments, to avoid duplication of efforts, and to maximize yield through an interdisciplinary approach to the total problem.

To assure that the model would reflect practicality, it was necessary to work cooperatively with several states in field testing the evolving model, the data set and the program planning procedures. To this end, the state directors of vocational education of several states entered into an agreement with The Center whereby each identified a full-time evaluation specialist to be jointly employed by the state and The Center. These specialists were available in their states and for workshops at The Center to assist project staff in the development of the conceptual framework, the instrumentation and procedures and to act as liaison with state staffs in the field testing procedures within the three states. Their participation in the project helped assure that the developing model reflected realistic, immediate and long-term evaluation requirements of the states.

Regular workshops were scheduled at The Center from May of 1967 through June of 1968 for pilot state evaluation specialists to meet with the Evaluation Project staff. At these workshops, the pilot state evaluation specialists reviewed the evaluation materials being developed at The Center. They assisted project staff with the continuous process of reformulating and refining the conceptual scheme, data system elements, and the evaluation instruments and procedures. These specialists were also responsible for coordinating the field test efforts in their respective states during the Spring of 1968.

From July of 1968 to July 1969, the developmental activities associated with the evaluation system continued to be the responsibility of Center Project staff. The pilot state coordinators in Kentucky and Colorado continued responsibility for reacting to developed products and for coordinating field-test activities within their respective states.

During the initial phases of the project three advisory committees were used to react to project plans, evaluation materials and procedures and to suggest alternative approaches to project design. One advisory committee consisted of state directors of vocational education selected by the National Association of State Directors within the American Vocational Association. Another committee consisted of recognized authorities in the vocational education profession with expertise in such areas as administration, supervision, teacher education and research. A third committee was composed of Center specialists.

In order to secure additional inputs from sources of expertise external to The Center, meetings continued to be scheduled with staff from the U.S.O.E. Reactions were secured from staff of other vocational education R & D centers and the report and recommendations of the National Advisory Council on Vocational Education were reviewed. Inputs into the evaluation model data system were made in order to anticipate future evaluative requirements which would be of value in presenting an objective picture by the states of vocational and technical education when required by future national advisory councils.

METHODOLOGY

First Phase - May of 1967 to November of 1968

Objective

These specific project objectives guided project staff activities during the first phase of the project which extended from May of 1967 to November of 1968:

1. The conceptualizing of a model system for the continuous, self-initiated evaluation of vocational education programs by state vocational education agencies.

2. The formulation of state vocational education program objectives and the development of specific program goals which assess the extent of program objective accomplishments.

3. The organization of a data set to measure the extent to which program goals are realized.

4. The formulation of procedures for state wide program evaluation.

5. The development of procedures for using evaluation results to assist state vocational education agencies in developing annual and long-range program plans.

The Conceptual Scheme

The first step in conceptualizing the evaluation system was to define the purposes to which the evaluation will be put. In this case, the three major purposes are to provide evaluative information to state level program planners which would assist them in redirecting state vocational education agency programmatic efforts, to assist them in their long-range program planning and to provide state vocational agencies with data for meeting accountability requirements.

The next step in conceptualizing the evaluation system was to determine how such a system can be organized to accomplish these purposes within a state vocational education setting. The project staff first reviewed existing methodological approaches to program evaluation. This review was completed by the Summer of 1967.

Project staff agreed that in order to meet the above purposes, an evaluation system would have to be developed which would be compatible with a systems approach to program planning. A chart was developed in October of 1967 which indicates a flow of events in using The Center's evaluation system. This chart, labeled Figure 1, is found in the Appendixes. It graphically describes, in a simplified manner, the sequence of the major task events involved in the evaluation cycle. These tasks can be further grouped into two major areas of activities. The first area involves the defining and developing of information requirements and the second area is concerned with articulating the data system with program planning procedures.

Figure 1 was initiated to provide project staff with a starting point for developing the evaluation model and should be viewed with this in mind.

Defining Information Requirements

In our evaluation plan, a set of program objectives are formulated which describe in general terms the programmatic thrust of the state agency. Then, for each objective a set of program goals is developed which is used to assess the extent to which program objectives are achieved. The program objectives and goals are formulated only after careful consideration is given to the decision requirements of the state agency. Data requirements are then formulated from the specific information needs posed by the program goals. Thus, data requirements are systematically derived in a sequence from evaluation purposes, program objectives and program goals. Data sources are then identified and information flow problems are worked through. The data collected is interpreted in terms of the extent to which the program goals were met.

Developing Information Requirements

The Center's evaluation model was conceptualized to permit states to develop their own program objectives, goals and data requirements. For the purpose of testing the usefulness of our evaluation system and in order to provide states with a good starting point, we developed program objectives and goals which could be accepted by many states and identified data which could be secured in most states. The project team's efforts at formulating program objectives were periodically reviewed by The Center Advisory Committee, the external advisory committees, and the pilot state evaluation specialists during the Summer of 1967. Their recommendations were considered in formulating a set of six program objectives which were then sent out to all state directors of vocational education and head state vocational education supervisors in October of 1967. In January of 1968 the returns from this national survey were compiled and a final set of four program objectives was produced. These state level program objectives for vocational education are found in Appendix A.

For each program objective, a set of program goal statements was formulated by the project staff. These program goal statements were designed to provide quantitative measures of the degree to which target populations of concern to vocational educators are being served, the extent to which local schools assure program quality and accessibility and the degree to which state vocational education agencies use student characteristic and follow-up data in their planning. Samples of such program goal statements are found in Appendix B.

The data elements in the system were derived from these program goal statements. Three general classes of data are involved in the evaluation system. These classes of data are concerned with target population needs, school and community characteristics and vocational education programs and processes.

The data system requires inputs from several sources. Data concerning vocational education programs, and the characteristics and status of students and facilities are to be secured from local schools. Certain classes of target population data are to be secured from appropriate state and local agencies.

The data system is organized by program sectors (public, private) by program levels, program areas, and where applicable, by facility types, sex, grade levels, and educational planning districts. The term "educational planning district" as used here refers to sub-divisions within a state having economic, social and population characteristics such that they require separate attention in terms of education program planning. A state using the evaluation system determines its educational planning districts. This procedure permits data to be interpreted in terms of local, regional and state level findings. These breakdowns will assist state level program planners in selectively allocating resources and in planning and redirecting agency activities.

In developing the data system, careful attention was directed toward selecting data elements which would require quantitative inputs rather than subjective judgments. Additional attention was directed toward developing a minimal set of data elements which would have the greatest degree of payoff for state agency program planners.

Articulating the Data System with Program Planning Activities

Following the collection of data from local sources, an interpretation of program goal accomplishments is completed. The evaluation system is conceived as a dynamic entity and is designed so that it is compatible with state vocational education agency requirements for reformulating annual and long-range projected plans of activities in the light of present accomplishments and emerging needs and priorities. In using the evaluation system to assist in the development of annual and long-range projects, state agency personnel would go through a series of procedural steps in which they redevelop program goals and data requirements. Alternative strategies for achieving the redeveloped program goals would then be examined in the light of obstacles--both internal and external to the agency, which might effect the implementation of such strategies. These strategies would also be reviewed in the light of implications they may have for staff roles and functions. Selected strategies to implement the newly developed program goals are then initiated. Following a recycling of the evaluation procedures, annual and long-range program goal projections would be readjusted in the light of new accomplishments and new decision requirements.

In The Center's evaluation and program planning procedures, service areas or units within the state agency would contribute to the overall projected plan of activities for the agency. These units or service areas functioning as sub-systems within the total agency, would review the evaluation data findings and develop a projected plan of activities consistant with their individual priorities and resources. The individual plans would then be assembled, reviewed and adjusted to make them compatible with the state agency's overall priorities.

This discussion of system conceptualization incorporated three requisites. First was the requirement that the evaluation system be designed for self-initiated evaluation which would contribute to decision making involvement in state level program planning. Second was the requirement that the system relate program outcomes and specific program goals as a logical basis for planning and replanning activities and programs. Third was the requirement that the evaluation system be a continually operative mechanism in order that projected plans might be continually modified in the light of continuously acquired and interpreted information.

Field Test Procedures

After the conceptual scheme was developed and the project staff had formulated a preliminary data set, preliminary field test tryouts of the materials were scheduled in the three cooperating states. This field-testing took place in the Spring of 1968.

The specific objectives to be accomplished during this field-testing were as follows:

1. To identify the relevance of the formulated program objectives and goals and data items for state program planning purposes.

2. To identify data which are available at the state level, in terms of the system's data requirements; and to determine what required data are not available at either state or local levels.

3. To conduct a simulated test of the program planning procedures.

4. To use the experiences gained during the field test period to revise program goals, the data set and evaluation procedures.

The general procedure undertaken to achieve these objectives required project staff to make regularly scheduled visits to each of the three cooperating states to interact with state personnel and to monitor state staff activities.

The Center and the cooperating states agreed to restrict the field-test tryouts to activities which could be carried out either within the state agency or with other governmental agencies at the state level. It would have been premature at this time to involve local schools in the evaluation procedures. This field testing at the state level was required before a finalized set of efficient evaluation instruments and procedures could be developed for statewide use.

Field Test Results

Project staff made frequent visits to the three cooperating states during the Spring of 1968. Evaluation system elements went through a series of reviews and revisions during this period of time. A review of field test results indicated that a number of revisions in the program goals and the data set were required before evaluation instruments and procedures could be finalized for statewide use. The data set was found to be generally satisfactory in terms of content but modifications needed to be made in terms of data item specificity. Data on file in the state agencies were originally collected and organized to meet federal and state agency reporting requirements. In many instances, these data could not be reorganized to meet evaluation purposes. In many instances, these data lacked the specificity required by the evaluation model data system. In addition, much of the manpower and adult target population information requested of other state agencies was unavailable. These agencies indicated that they either required greater lead time to organize such data or else pointed out that the data requested by the State Vocational Education Agency was simply unavailable.

Since sufficient evaluation data could not be collected or organized to permit an initial field test of program planning procedures, state staffs in the cooperating states were asked for their general reactions to the approach being suggested. The obtained reactions were generally favorable.

Additional benefits accrued from the field-testing activities. Project staff involvement with state staff supervisors provided us with many insights for increasing the efficiency of the model. We also believe that state agency personnel in many instances became more aware of the implications and benefits that a state level evaluation system could have from their service area or unit operations. Channels of communication were either established or broadened between the program planning and evaluation personnel in the state vocational education agency and their counterparts in other state agencies who are being asked to supply data for the model.

Second Phase - November of 1968 to the Present

The experiences gained in field-testing the evaluation model in the cooperating states provided The Center project staff with the needed reality check for improving the model's effectiveness and efficiency.

Objectives

Project staff, after assessing the results of the field test tryouts, developed the following objectives to guide their activities during the second and final phase of the development of the evaluation model.

1. A data system compatible with state and national needs will be developed to assess program effectiveness.

2. A program planning methodology for state vocational education agencies will be developed for use with the data system.

3. Data processing programs and procedures will be developed for use with the data system.

4. Field testing and validation of the total model will be carried out in the two participating states to assure that the finalized system is effective and efficient in terms of its purposes.

Formulating the Revised Data System

Project staff reexamined the program goals and the existing data set in the light of the 1968 amendments to the National Vocational Education Act and Office of Education reporting requirements. Field test results also pointed up the need to revise the data set in terms of state requirements.

With these considerations in mind, the project staff has developed a data set which has been incorporated in seven data collection instruments for use in retrieving statewide program evaluation information. Four of these instruments are designed for completion by local school administrators and vocational teachers. These four instruments provide information about local schools' vocational program and local employment information. Two of the instruments are designed for securing student characteristic data to provide a continuous monitoring of student status and for student follow-up information. A seventh instrument is designed to provide information about the training needs of target sub-populations and the economic status of areas within the state. This data is compiled by state agency personnel. The information flow cycle for these instruments is found in the Appendix and is labeled Figure 2.

The student follow-up procedures are designed to be initiated by the state agency rather than local school districts. The model permits the state agency to conduct follow-up of program terminations on the basis of specialized samples derived to answer specific problems. For the sake of efficiency, it is believed that the state agency is in a better position to handle follow-up than are local schools.

The data collection instruments are designed for machine processing and data analysis. The use of machine processing will permit analyses of the relationships between students characteristics, program processes, and outcome indices. This machine processing will lead to almost instantaneous retrieval of information for use by program planners.

Careful attention was directed to problems of information flow from local sources to the state unit conducting the evaluation procedures. The instruments have already been initially pilot tested in local schools to assess semantic problems inherent in the data items and to determine the time required by school personnel to complete the various data forms. Those local personnel who have been involved in reacting to the revised instruments have indicated to us that in most instances they found instrument length and the time required for their completion to be quite reasonable. These reactions were reviewed by the project staff. The number of data items was further reduced and wording revised where necessary. Throughout the procedure for designing the instruments, careful attention has been paid to meeting the technical requirements of instrument construction.

The project staff believes quite strongly that increased data reliability can be obtained by providing local personnel supplying data with the feedback of evaluation results which would be of interest and concern to them. Those local school administrators who have reviewed the instruments have provided some indications of the types of feedback that they would consider important for their needs.

Present project plans call for field-testing the latest revisions of instruments and procedures in four cooperating states beginning in July of 1969. These states are Colorado, Connecticut, Kentucky and Michigan. Finalized instrumentation and machine processing procedures to handle data will be produced by September 1969. A major test of the system will then be conducted in several or all of the cooperating states beginning in September of 1969. The project staff will then work with these cooperating states in assessing the program planning procedures which are designed to assist the state agencies in developing annual and long-range projects of their programmatic activities on the basis of evaluative results. Following this phase of the field-testing of the instruments and procedures, a finalized evaluation system will be produced at The Center and the materials will be disseminated to potential users.

FIGURES AND APPENDIXES

Figure I

Figure II

Appendix A

Appendix B

For Discussion
Purposes Only

The Center For Vocational
and Technical Education
The Ohio State University
Project 20

December, 1967

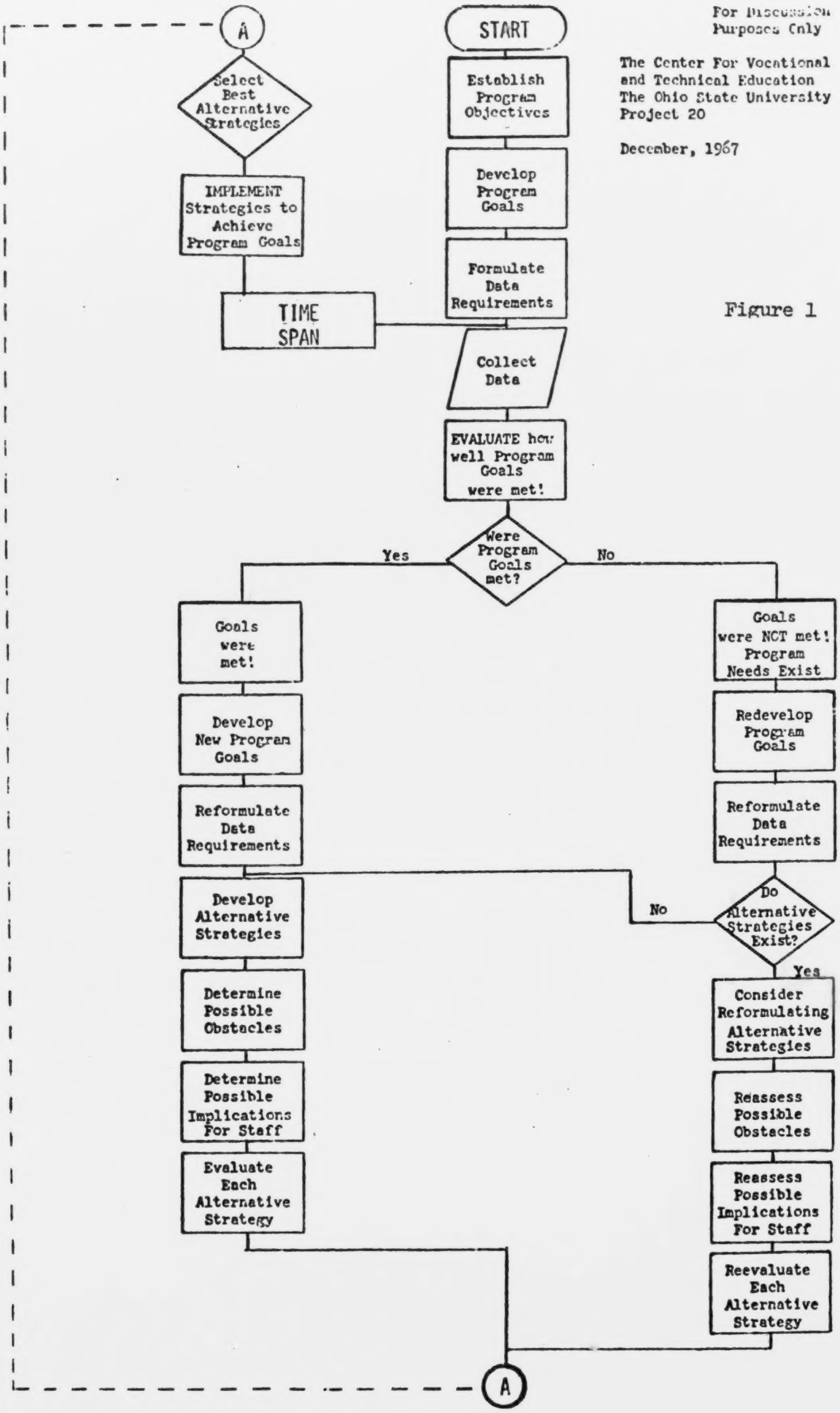

A
Select Best Alternative Strategies
IMPLEMENT Strategies to Achieve Program Goals
TIME SPAN
START
Establish Program Objectives
Develop Program Goals
Formulate Data Requirements
Collect Data
EVALUATE how well Program Goals were met!
Were Program Goals met?
Yes
No
Goals were met!
Develop New Program Goals
Reformulate Data Requirements
Develop Alternative Strategies
Determine Possible Obstacles
Determine Possible Implications For Staff
Evaluate Each Alternative Strategy
Goals were NOT met! Program Needs Exist
Redevelop Program Goals
Reformulate Data Requirements
Do Alternative Strategies Exist?
No
Yes
Consider Reformulating Alternative Strategies
Reassess Possible Obstacles
Reassess Possible Implications For Staff
Reevaluate Each Alternative Strategy
A

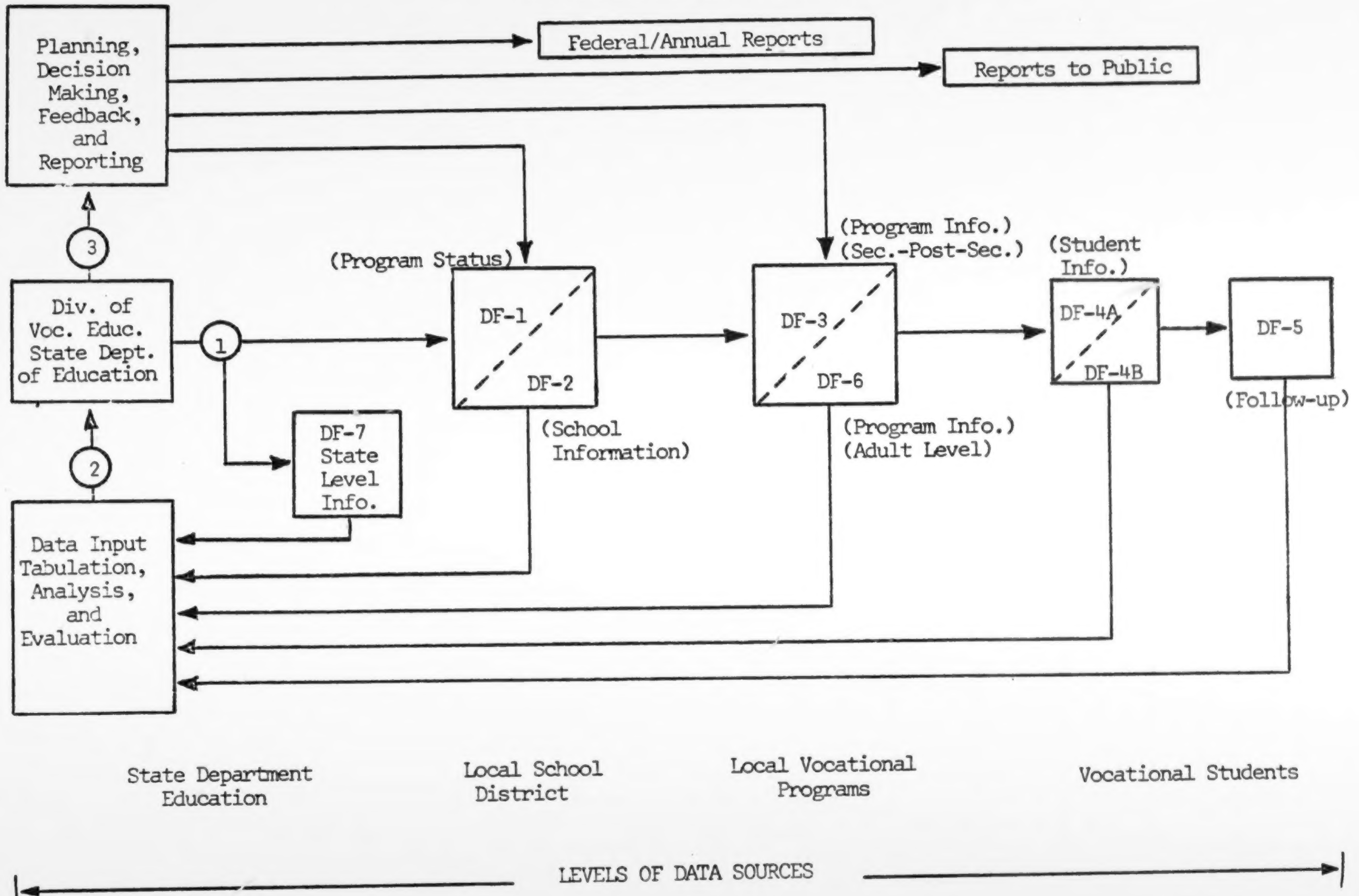
Figure 1

7/69

FOR DISCUSSION PURPOSES ONLY
The Center For Vocational
and Technical Education
The Ohio State University

Figure 2

STATE EVALUATION SYSTEM FOR VOCATIONAL EDUCATION
INFORMATION FLOW NETWORK


Planning, Decision Making, Feedback, and Reporting
Federal/Annual Reports
Reports to Public
3
Div. of Voc. Educ. State Dept. of Education
1
2
(Program Status)
DF-1
DF-2
(School Information)
DF-7 State Level Info.
(Program Info.) (Sec.-Post-Sec.)
DF-3
DF-6
(Program Info.) (Adult Level)
(Student Info.)
DF-4A
DF-4B
DF-5
(Follow-up)
Data Input Tabulation, Analysis, and Evaluation
State Department Education
Local School District
Local Vocational Programs
Vocational Students
LEVELS OF DATA SOURCES

APPENDIX A

PROGRAM OBJECTIVES

Objective One

To provide vocational education to youth and adults who will be entering the labor force and to those who seek to upgrade their occupational competencies or learn new skills.

Objective Two

To provide comprehensive curricula which relate general and vocational education offerings to the vocational objectives of students.

Objective Three

To provide increased accessibility to programs of vocational education to meet the needs of those to be served.

Objective Four

To provide quality instructional programs which meet the vocational aspirations of people while being compatible with employment opportunities.

APPENDIX B

SAMPLE GOAL STATEMENTS

Objective One

TO PROVIDE VOCATIONAL EDUCATION TO YOUTH AND ADULTS WHO WILL BE ENTERING THE LABOR FORCE AND TO THOSE WHO SEEK TO UPGRADE THEIR OCCUPATIONAL COMPETENCIES OR LEARN NEW SKILLS.

GOALS	
A	#_____public secondary school youth are enrolled in vocational programs.
B	#_____public secondary school youth with physical or mental handicaps are enrolled in vocational programs.
C	#_____disadvantaged public secondary school youth are enrolled in vocational programs.
D	#_____persons are enrolled in post-secondary preparatory vocational programs.
E	#_____persons with physical or mental handicaps are enrolled in post-secondary preparatory vocational schools.
F	#_____disadvantaged persons are enrolled in post-secondary preparatory vocational programs.
G	#_____persons are enrolled in adult preparatory vocational programs.
H	#_____persons are enrolled in adult supplementary vocational programs.
I	#_____persons with physical or mental handicaps are enrolled in regular adult preparatory vocational programs.
J	#_____disadvantaged persons are enrolled in regular adult preparatory vocational programs.

(Goals For Objective One Continued)

OBJECTIVE THREE

TO PROVIDE INCREASED ACCESSIBILITY TO PROGRAMS OF VOCATIONAL EDUCATION TO MEET THE NEEDS OF THOSE TO BE SERVED.

	GOALS
A	#_____ vocational programs enroll students with educational deficiencies which could act as serious barriers to successful program completion or job placement.
B	#_____vocational programs make available specialized educational instruction to students with educational deficiencies which could act as serious barriers to successful program completion or job placement.
C	#_____students who did not complete their instruction did so because of inability to meet instructional and related costs.
D	#_____students who did not complete their instruction did so because of unavailability of transportation.
E	#_____new vocational programs approved to receive state funds are operational.
F	#_____vocational programs enroll the potential number of students they can accommodate.
G	#_____public schools offering vocational programs operate them during both day and evening hours.
H	#_____public schools offering vocational programs operate them at times other than the regular school year (September - May of June.)
I	#_____public schools offer vocational group guidance.

(Goals for Objective Three Continued)

STATE DIRECTED EVALUATION OF LOCAL PROGRAMS

The Process

by

Robert A. Mullen*

In light of the developments in the past several years, and specifically in the past four months, the matter of evaluation of vocational education programs has taken on increased importance. Over the years, prior to the 60's and in the early 60's, major efforts in the evaluation of local programs of vocational education as far as many state departments of education were concerned involved a "Head-Count" system. This system was mainly intended to reflect the number of former students who had been employed in an occupation directly related to the vocational training program in which he had participated. The inadequacy of such a system became quite obvious when one considered that an individual receiving training in a given vocational area might very well be involved in an area somewhat remotely related to that training area and yet have profited substantially from the training he had received.

In 1966 the State Department of Public Instruction initiated a state directed evaluation of local programs of vocational education. It would be well to point out that from the beginning, the major purpose of this evaluation was to help improve programs of vocational education in existence and to insure the highest possible quality for programs that were to be implemented in light of future available resources. The process of evaluation of vocational education programs on a statewide basis, which was started during the 1966-67 school year, purports only to be a way in which to carry out such an evaluation. This program was set up as a five year project. Each of the five years, twenty percent of the local administrative units are randomly selected to participate in the evaluation. The first two years of the project were designated as pilot project years in which methods and techniques would be developed and tried our. It is obvious that in such a developmental process some weaknesses are identified and some strengths are evident. It is from such experiences that the process will be strengthened so that the result will be improved programs of vocational education.

In attempting to initiate an in-depth evaluation process we must consider what questions we want answered beyond the head-count type previously described. Some such questions might be as follows: Are vocational programs in local situations located according to occupational opportunities, needs of students and with an eye toward comprehensiveness of the school in which it is located? Are programs of vocational education being conducted with adequate equipment, materials, including audio-visuals, and are they located in adequate facilities? Are students receiving adequate guidance and counseling at the proper times? Are students being given assistance where applicable in finding jobs once their training program has been completed? Is instruction timely, up-to-date, and transferable to related occupations or to continuing education opportunities and are students receiving a broad outlook toward occupations through the application of the cluster concept? Are local school administrators planning vocational education offerings to insure that programs are in keeping with current and projected labor market demands? Are programs within the individual school setting carrying on a constant program of evaluation involving student reactions, teacher reactions, employer reactions, parent reactions, reactions of the local school board members, and other people where applicable? Is the type of supervision being provided for programs adequate in terms of program improvement? Are vocational teachers utilizing a variety of teaching methods and techniques and, in addition, are vocational teachers pursuing a program of professional development involving the improvement of their teaching methods as well as updating and upgrading themselves in subject matter areas? Are advisory committees being utilized effectively?

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A state staff desiring to initiate an evaluation of local programs of vocational education, we believe, must take into consideration first, how will it gain the necessary commitment from the members of the state staff to be involved in the evaluation and then, the necessary commitment from local education agency personnel including superintendents, principals of schools, counselors, teachers and coordinators within the school setting? The matter of gaining commitment, we believe, in North Carolina, involves a clear and thorough understanding in the beginning as to the purpose of the evaluation. If the evaluation is framed in a positive way, and is believed to have but one real purpose for existence, namely that of improving programs of vocational education, as has been said, and if this positive concept is adhered to throughout the entire evaluation process, individuals that are to be involved in the evaluation will likely participate enthusiastically rather than simply seeing the evaluation as another requirement made of them at the state level. It is a word used often but the word involvement is the key word at this point. From a state level viewpoint, the commitment which we speak of is so necessary because in the months and years that follow the initiation of the evaluation process a tremendous amount of staff time will be required to carry out the continuous process of evaluation. Few individuals working on any state staff, will be able to spend the additional time required for participating in an evaluation process and be able to continue all of the things that they have been doing prior to this time. It then becomes a matter of assignment of priorities at the state level. Determining that a state directed evaluation of local programs is to be a high priority involves a commitment of the top echelon personnel. In North Carolina this was true starting at the level of the State Superintendent of Public Instruction. We might add parenthetically as one looks down the administrative organizational chart within a state department, a like spoken commitment on the part of division and/or section heads is absolutely necessary. To attempt to initiate a state evaluation of local programs with anything less than top echelon commitment would in our opinions, ultimately doom such an effort to failure.

If it seems that an unusual amount of time is being spent on the matter of commitment, it is through some experience. We believe we can say without contradiction, that in North Carolina top level commitment was initially a full commitment and a continuing one and without this level of commitment, evaluation efforts would have experienced much less a degree of success than we feel that it has.

The next step in the process is to determine the purpose for the evaluation. As has already been said, we determined broadly that its purpose was to improve each program, but I specifically relate here as to what the outcomes or the findings of the evaluation will be used for. Participants in the evaluation process should thoroughly understand from the beginning the purposes evaluation findings will be used for. For example, State Advisory Councils of Vocational Education as mandated under the Vocational Amendments of 1968 may intend to use findings of a state directed evaluation of local programs to report to the National Advisory Council. It is our belief that all participants should at the time of the initiation of the process clearly understand this if such is the case. If evaluation findings are to be used for comparative purposes to either compare sections of a state or perhaps one state with another, or various schools or programs in an area, or perhaps even to compare various programs within a school, then participants should clearly understand this in the beginning. If an evaluation is to be used for such comparative purposes, it would be necessary that variables among local school systems such as available resources, and ability to pay should be taken into consideration. Another form of comparison that an evaluation might be used for would be to look at programs according to maximal standards. Another purpose for a program of evaluation might be to determine the contribution to program quality made by state supervision or for that matter contributions that might be made by supervision at any level within an organization at the local, state, regional or national level.

In moving forward in the evaluation process, some time must be taken to determine the types of baseline data which are available from which to evaluate programs. Some types of baseline data that perhaps should be considered would be specific objectives by course areas, facility standards in which programs are to be offered and adequate follow-up reports to give some indication of how well individuals are doing in their work. At this point in the process, it is well to consider that as the evaluation process continues on an annual basis, how will a state staff determine in the future that an evaluation being carried out is in essence doing what it purports to do. If this is taken into consideration properly, it forces a state directed evaluation to take a practical and measurable approach towards looking at local programs of vocational education rather than a general approach. This leads the evaluation process into the determination of evaluation objectives as to what things are specifically to be attained through the state directed evaluation of local programs. In North Carolina the following 22 objectives were determined by a committee representative of all vocational areas:

(1) To determine the extent to which administration and supervision of vocational education is adequate, both at the state and local levels. (General)

(2) To determine the extent and effectiveness of program projection, planning, and evaluation at the state level. (General and Specific)

(3) To determine the adequacy of state and local involvement in local program planning and evaluation for vocational education. (General and Specific)

(4) To determine the extent to which vocational education resources are allocated according to occupational needs, both useful and gainful. (General)

(5) To determine the extent to which vocational offerings are meeting stated objectives. (Specific)

(6) To determine the level of staff (teachers, coordinators, counselors) preparation and the extent to which these individuals are engaged in continuous and long-range programs of professional development. (Specific)

(7) To determine the extent to which vocational teachers plan and follow through with sufficient and effective teaching practices and experiences suited to student needs. (Specific)

(8) To determine the extent to which appropriate facilities, equipment, and teaching materials and supplies are available and are used for the various programs. (Specific)

(9) To determine the extent to which vocational teachers contribute to career-planning of students through program interpretation and instructional activities. (Specific)

(10) To determine the extent to which vocational offerings are selected by students on a sound career-planning basis. (Specific)

(11) To determine the extent to which teachers and school administrators are using experimentation, pilot programs, and innovations as a means of improving the quality of instruction. (General and Specific)

(12) To determine the extent to which vocational education is a cooperative effort involving all education. (General and Specific)

(13) To determine the extent to which students are entering the occupational area for which they received vocational training and are progressing on the job or continuing training. (Specific)

(14) To determine the extent to which the curriculum provides for students who have special needs. (General and Specific)

(15) To determine the extent to which the needs of adult farmers and homemakers are being met. (Specific)

(16) To determine the extent to which vocational teachers are involved in the total school activities. (Specific)

(17) To determine the extent to which advisory committees are used in planning new programs and advising existing programs. (Specific)

(18) To determine the extent to which community resources are used in the various instructional programs of vocational education. (Specific)

(19) To determine the extent to which vocational teachers, counselors, coordinators, and administrators interpret the vocational education program. (General and Specific)

(20) To determine the extent to which youth organizations strengthen and extend the various vocational programs. (Specific)

(21) To determine the extent to which vocational teachers assume professional leadership beyond the instructional program. (Specific)

(22) To determine the extent to which vocational offerings are available to students on a fee-free basis. (Specific)

It may be noted that some objectives are listed as being general, some as specific, and some as being both general and specific. General means it is applicable to all vocational education and Specific to each subject area.

In North Carolina as the preceeding 22 objectives were determined, it was decided that the entire evaluation would fall within the framework of four basic questions. These are first, what is the present status of vocational education in the State of North Carolina in each of the classrooms, shops and laboratories? Such a question suggests a multitude of topics and included among them are questions concerning personnel competencies, facilities, instructional materials and equipment, the type of supervision to be provided and in essence the status question is asking most basically to what extent are the several local programs within the state attaining the specific objectives which are set forth for them, and meeting the needs of students, business and industry?

The second question is what ought vocational education in the classrooms, shops, and laboratories be in the coming years? Specifically, reference here is program projection of three to five and perhaps even seven to ten years? The question of what programs ought to be breadth and depth wise is far from an academic one, and in my opinion, evaluation directed at the state level must consider this among the most important questions that can be asked. In light of the 1968 Vocational Education Amendments and its many implications, one can surmise that vocational education in the years to come will change and will be in the 70's in many respects quite unlike programs have been in the 60's. We must consider the necessity for programs to be extremely responsive to not only current labor market demands but projected labor market demands in a wide area rather than labor market demands in a local community. And, so in addressing an evaluation to the question of what ought vocational education to be, you are beginning to set the stage for a step that will come later in evaluation, namely in succeeding years as you look back at programs and the status as they were determined and you look at programs as they ought to be, you can begin to determine the extent to which programs have changed to meet those things as set forth in program projections.

A third question, and indeed a most basic one, involves the identification of problem areas that exist in vocational education in local programs. What are the barriers which may likely stand in the way of program quality in the future? The immediate reaction here by many people is, of course, that the lack of money is the main barrier, but through our evaluation in North Carolina in adopting this in our structure, we have determined extensive numbers of problems that the local personnel in vocational programs sense that we at the state level had not seen as problems. A basic point here is that if local personnel perceive something to be a problem, it is indeed a problem whether state staff personnel recognize it or not! In retrospect, concerning the matter of commitment, it is well to consider that local personnel will become committed to state directed evaluation of vocational education more readily if they sense that state personnel through the evaluation are genuinely interested in local problems. The problems identified will normally fall into three major categories. The first category will be those problem areas which can be and should be handled at the local level. The second category will be those problem areas that can and should be handled at the state and Federal level, but by far the largest and perhaps the most important area of problems will be those that are of joint interest and concern at the state and local level. It is within this area of problems that we concern ourselves with question four as to what will be the future course of action for local programs? If through the evaluation local personnel can come to see that local programs are a joint partnership of state and local people then stronger programs may emerge. As evaluation is perceived as a process, one can then see that programs are planned, implemented, carried out, evaluated and replanned, etc., thus evaluation becomes a part of a continuum ad infinitum and can in this context make its greatest contribution to a program improvement. It is my opinion that evaluation must be aimed specifically at situations throughout the country, I believe state directed evaluations will meet their biggest obstacle in that all too often we have generally understood among us what program objectives are, but may not have set them forth in an explicit fashion so that program objectives are understood by all.

Question four which involves determining what future course of action will be taken in planning local programs is where the evaluation process begins to pay dividends. Again, in reference to the 1968 Vocational Education Amendments, increased local autonomy and increased flexibility at the local level, automatically carries with it an increased responsibility of local personnel to plan more thoroughly than perhaps has been the case in the past. As local personnel become more deeply involved in planning indepth, they must see that the evaluation process plays an extremely key role in this planning.

At this point it was necessary to begin the process of developing the necessary instruments containing the criteria to be used in the evaluation. During this process, local personnel were utilized as consultants. This involved teachers, counselors, administrators, and supervisors. A separate instrument was developed for local administrative and supervisory personnel; both trade preparatory and a separate instrument for the cooperative program; introduction to vocations personnel; agricultural education personnel; distributive education personnel; and business and office occupations education personnel. These instruments are up-dated annually and every effort is made to develop new instruments each year which will be more effective, based on the experience of the use of the previous instrument. Next, twenty percent of the administrative units were selected for the first year. The following memorandum was sent to superintendents of these administrative units:

SUBJECT: Evaluation of Vocational Education Programs

Your administrative unit is one of the 35 selected randomly for an evaluation of your Vocational Education program during 1966-67. This is the first step in a five-year program which will involve all administrative units in the State -- a requirement in our State Plan for Vocational Education.

Any worthwhile evaluation must be a cooperative effort involving you and your staff and having as its primary purpose the improvement of instruction in vocational education, including the redirection and expansion of offerings where needed. The state staff desires to be your partners in this project.

A small staff committee, under the direction of Robert A. Mullen, Associate Director of Vocational Education, is developing plans for the evaluations. We do, of course, need your consent and commitment to this cooperative effort now in order to arrange schedules, prepare materials, etc., for carrying out this function. Therefore, we would appreciate a reply from you (hopefully an affirmative one) relative to your administrative unit. May we hear from you soon?

As soon as more definite plans have been developed, we shall communicate with you concerning the next step. If you should have questions relative to this subject, call or write Robert A. Mullen, Associate Director, Division of Vocational Education, Department of Public Instruction, Raleight, North Carolina, telephone 829-7362.

Upon acceptance of the administrative unit to be involved in the evaluative process, a meeting is scheduled which involves superintendents, other members of the local administrative central office staff, counselors, principals, and all vocational teachers in the schools involved. This meeting is a two-part meeting; the first part a general meeting for all personnel at which time the overall process of the evaluation is carefully explained. The second portion of this meeting involves personnel in each of their areas meeting with a member of the State staff in order that the instrument to be used is carefully explained to them. Each person to be involved in the evaluation is given two copies of the evaluative instrument and are instructed to keep one copy and at a later date one copy is returned to the state staff. During the period of from six to eight weeks following, each person involved in the evaluation is asked to look at his program and carefully fill out the evaluative instrument which he has received. According to a pre-determined schedule, each person at the local level is then visited by a member of the state staff at which time the instrument is reviewed and the vocational program is carefully analyzed in relation to the twenty-two objectives which were stated for the evaluation.

A meeting is then held involving superintendents, other members of the central office staff at the local level, and principals of schools and an interview is conducted concerning all aspects of the vocational program in the schools in that administrative unit. In addition to discussing the evaluative instrument filled out by local administrators and supervisors, additional questions are asked, such as: What specific recommendations can you make as to help that you need from the state staff which you are not presently getting? Notes are taken during the course of each of these meetings and are later incorporated into the evaluation report.

After all visits and interviews are completed, a final report is prepared for each administrative unit. The evaluation summaries should reflect programs in vocational education according to the pre-determined 22 objectives set forth for the evaluation:

SUBJECT: Preparation of Evaluation Summaries

The summary form should reflect the strengths and needs of each service area for an entire administrative unit. However, in any instance where a specific school within an administrative unit needs to be singled out, this should be done.

In preparing the summary, it would seem reasonable that many points could be summarized on a general basis for an entire administrative unit. An example of this might be the part involving advisory committees. If advisory committees are not used at all by any teachers in the administrative unit, a statement summarizing this as a need for the entire administrative unit would suffice. Examples of where a specific school might need to be singled out would be poor facilities in one school and quite adequate facilities in other schools in that unit, or one teacher effectively utilizes the advisory committee whereas the remainder are not so involved.

This final evaluation report for each administrative unit is then distributed to each individual in each school and each administrative office at the local level that has been involved in the evaluation. They are instructed to carefully study the results of the evaluation. Each member of the vocational staff at the state level is also given a copy of the final evaluation report and is instructed that during the coming school year when supervisory visits are scheduled to the various schools and to the administrative units involved in the evaluation, specific emphasis should be put on following up the evaluation recommendations in terms of ways and means of improving the programs of Vocational Education involved. Approximately eighteen months after each individual has received the evaluation report, he is asked to react to the following questions:

1. The following areas were identified as needing improvement in this program in this school.

2. The following actions have been taken to bring about these improvements. (Please list specific improvements and actions taken.)

3. The following actions are now being taken to bring out these improvements. (Please list specific improvements and actions taken.)

4. The following action will be initiated later to bring about these improvements. (Please list specific improvements anticipated - approximate month or months in which action will be taken and what action is anticipated.)

5. Since the completion of the 1966-67 evaluation of vocational education in this school, the following additional improvements have been identified as being needed either because of the initiation of a new vocational course or because of new problems in existing vocational courses. (Please list specific improvements underway or anticipated, and action being taken or action anticipated.)

6. The following areas have been identified as needing improvement in this program in this school, but no action has been taken, or is being taken, or is anticipated to bring about the needed improvements. (For each area listed, please briefly explain why no action has resulted to improve each area identified.)

A number of out-of-state and in-state consultants have been asked to review all aspects of the evaluation from the initial phase of the establishment of the objectives to the final follow-up of the evaluation in the field. The evaluative instruments are, as has been previously indicated, changed annually. The goal is to continually screen the instruments so that they may be no longer than necessary and yet be an effective part of the process in identifying answers to the four previously identified questions of status, the direction programs ought to be going, identified barriers, and specific plans for the future.

Experience in this evaluative process has indicated several desirable points to be considered for the future of the process. Among these are: the desirability of involving local personnel in inservice programs so that they might become more intimately involved in the evaluation process, gradually shifting a portion of the responsibility from the state level to the local level; that a re-organization at the state staff level take place so as to provide increased general supervision in addition to supervision by specialized areas; and, that increased emphasis be put upon working with personnel at the local level so that the result of future evaluations may play a more important role in the future of programs at the local level. Experience has also shown that the results of the evaluation are important in developing long-range plans for the future of Vocational Education at the local level. Perhaps an important aspect of the evaluation has been an increasing realization on the part of the involved personnel for the necessity of a planned program of evaluation of vocational education programs. The evaluation to date has produced some desirable results in terms of program improvement at the local and state levels. Local level administrative and supervisory personnel have indicated the evaluation has been a most welcome process in that it brings higher quality of supervision to the vocational programs in terms of stated objectives of vocational programs.

PROJECT IMPROVE:
THE DEVELOPMENT OF A STATE OPERATED EVALUATION SYSTEM

by

Jerome Moss, Jr., Brandon B. Smith
Frank Pratzner, David Wheeler
and William Stock*

INTRODUCTION

The title of this paper is slightly misleading. The Minnesota Research Coordinating Unit is not developing a complete system for evaluating vocational programs in the State; it is developing only a subsystem.

Our perception of a complete evaluation system would provide means, first, for answering the macro-level essentially quantitative questions typically asked by State Boards of Vocational Education, Advisory Councils, legislators, and the United States Office of Education, such as: To what degree is the public vocational program satisfying the demand for occupational training in the State? To what extent is the public vocational education program serving the number and kinds of students that it should be serving? The subsystem we are developing makes no attempt to answer these questions.

The second kind of questions that should be answered by a complete program evaluation system are micro-level, qualitative and diagnostic in nature. How "good", how "successful", is the automechanic curriculum in school X? How efficiently is it operating? What can be done to improve its effectiveness with minimum increase in cost? These are the kinds of questions the Minnesota RCU effort is attempting to answer.

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*A recording of Dr. Moss's original presentation was inadvertently lost in the process of transcribing it. This paper which was delivered at the 63rd Annual American Vocational Association Convention in Boston, Massachusetts on December 8, 1969 is a later version of the same evaluation system described by Dr. Moss at the Institute. Dr. Moss and his colleagues are all members of the Minnesota Research Coordination Unit for Vocational Education at the University of Minnesota.

Moreover, a complete evaluation system should be applicable to all kinds and levels of vocational instruction. Our subsystem, at least temporarily, is focused upon post-secondary level vocational instruction.

Thus, the project, in which we are cooperatively engaged with the Vocational Division of the Minnesota State Department of Education, may best be described as an attempt to design, develop and test a state-operated subsystem for the periodic evaluation of the efficiency of individual post-high school and adult vocational programs.[1] The subsystem will provide educational managers and program developers at the state and local levels with information useful in making investment decisions about, and in improving the quality of, specific vocational programs throughout the State. When completed, the subsystem should be readily integrated with a total management information system and be adaptable to all educational levels of vocational instruction.

The project is planned in three phases: (a) Phase I will design the overall subsystem and identify relevant variables; (b) Phase II will develop the instrumentation and the data collection and processing procedures; (c) Phase III will try-out and revise the subsystem. Phase I is now nearly complete.

SOME PREREQUISITES OF THE SUBSYSTEM

Before attempting to design the subsystem, certain issues in evaluation were examined and assumptions made about them which served to create the framework within which subsystem development could proceed.

It was decided, first, that the subsystem should employ the "products" of specific vocational programs - former student-learner behavior - as evaluative criteria. The State has already tried using experts to assess the quality of program "process" and found the usefulness of the results to be severly limited.

Second, diagnosis of instructional programs - the ability to determine how effectiveness can be improved - is an essential aspect of a subsystem directed toward assessing program quality.

Third, vocational program management decisions cannot be made without regard to costs. Therefore, the subsystem must yield information on efficiency as well as effectiveness.

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[1] Program is considered the set of educational experiences and related services provided by an agency and intended to culminate for each student-learner in new, continued or improved employment in a pre-specified occupation or group of occupations.

Fourth, all evaluation requires comparison with some standard. At present we possess no realistic absolute standards for judging the qualitative effectiveness or the efficiency of a given vocational program. The comparative standard must, therefore, be provided by other vocational programs. Our evaluation will determine the relative effectiveness and efficiency of two or more "equivalent" programs.

Fifth, and finally, to make possible maximum efficiency, objectivity, and useful comparability, a subsystem designed to provide periodic program evaluation should be state operated.

MAJOR QUESTIONS OR TASKS IN SUBSYSTEM DESIGN

In order to develop the overall design of the evaluation subsystem within the assumed prerequisites, consideration was given to five basic questions.

How should vocational programs be classified so that we can make logical, useful comparisons between them, as well as provide the basis for future generalization of results?

Since purposes dictate desired outcomes and, in turn, criterion measures, what is to be assumed about the role and purposes of post-secondary vocational education?

What are the educational and other factors that influence educational outcomes? That is, what is the educational production function?

What kind of cost function should be developed?

What decision criteria should be employed to determine the programs in which additional funds should be invested?

The remainder of this paper will treat briefly only the first three of these questions. In light of time restrictions, the questions of developing appropriate cost functions and economic decision criteria will be eliminated.

CLASSIFICATION OF PROGRAMS TO BE EVALUATED

Figure 1 depicts the categories developed for classifying the post-secondary vocational programs to be evaluated.

FIGURE 1

Classification of Programs to be Evaluated

Student Characteristics	Preparatory/ Retraining Programs				Updating/ Upgrading Programs			
	Occup. A	Occup. B	etc.	etc.	Occup. A	Occup. B	etc.	etc.
Socio-Econ. Disadvantaged								
Non-Socio-Econ. Disadvantaged								

The comparison of effectiveness and efficiency of vocational programs is meaningful only when the programs being compared are substitutable. For example, we must always provide some kind(s) of preparatory training and opportunities for updating will always be necessary. One purpose does not substitute for the other. It does no good to know that a certain preparatory program is more effective than some updating program if both types of programs are essential. Similarly, programs designed to prepare machinists are not competitive with (or substitutable for) programs designed to prepare bakers. There is no educationally useful purpose in comparing two such programs.

Further, vocational programs which enroll widely different student groups are difficult to compare fairly. Since we are now particularly concerned about the disadvantaged, Figure 1 also suggests that the student characteristic of socio-economic disadvantagedness be used to classify vocational programs. We can then determine empirically, through our evaluative efforts, whether or not disadvantaged students require different kinds of programs than other students for maximum effectiveness; if not, other categories based upon different student characteristics can be tried out.

Thus, vocational programs classified in a given cell will be compared with each other, while programs in different cells will not be compared.

Figure 2 magnified Figure 1 and indicates some of the different kinds of vocational programs that fall within a given cell and which can therefore be legitimately compared with each other.

FIGURE 2

Kinds of Programs to be Compared with Each Other

Student Characteristics	Preparatory/Retraining Programs	
	Occupation A	Occupation B
Socio-Econ. Disadvantaged	Day trade; cooperative; evening; part-time; on-the-job (formal and informal); apprenticeship, etc.	

PURPOSES OF POST-SECONDARY LEVEL VOCATIONAL EDUCATION

The second major question in subsystem design dealt with the role and purposes of post-secondary level vocational programs. It is assumed that criterion measures, in terms of former student learner behaviors, will be based upon program purposes.

Figure 3 depicts our rationale for viewing vocational purposes and their inter-relationships.

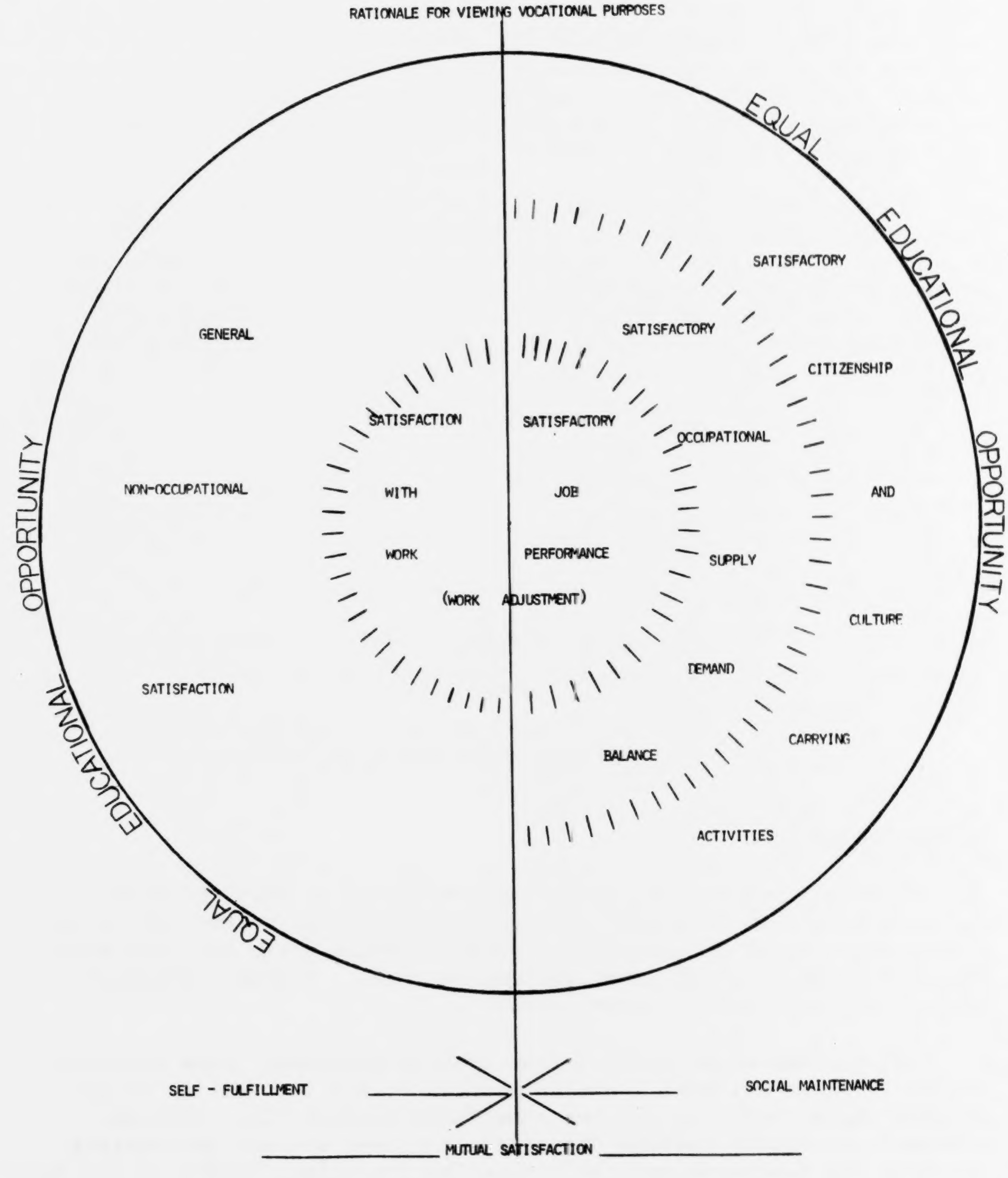
Figure 3 shows that the central concern of post-secondary level vocational education is to impact upon the individual in his work role. That is, the principal purpose of vocational education is to improve the work adjustment of the individual as measured both by worker satisfactoriness and satisfaction. Individual worker adjustment, however, should be accompanied by occupational supply-demand balances which are optimal under existing economic conditions if the public interest is also to be served. In addition, vocational education programs should have a concomitant positive impact upon both the general (non-occupational) satisfaction of the individual and his contribution to society through satisfactory citizenship and culture-carrying activities.

All of these product outcomes are circumscribed by the extent to which equal educational opportunity has been provided.

Thus, like all of education, vocational education has both individual self-fulfillment and social maintenance roles. Unlike the rest of education, it focuses upon the occupational-work aspects of the interaction between the individual and society.

FIGURE 3

RATIONALE FOR VIEWING VOCATIONAL PURPOSES


EQUAL EDUCATIONAL OPPORTUNITY
EQUAL EDUCATIONAL OPPORTUNITY
GENERAL
NON-OCCUPATIONAL
SATISFACTION
SATISFACTION
WITH
WORK
SATISFACTORY
JOB
PERFORMANCE
(WORK ADJUSTMENT)
SATISFACTORY
OCCUPATIONAL
SUPPLY
DEMAND
BALANCE
SATISFACTORY
CITIZENSHIP
AND
CULTURE
CARRYING
ACTIVITIES
SELF - FULFILLMENT
SOCIAL MAINTENANCE
MUTUAL SATISFACTION

PRODUCTION FUNCTION

The third major question to answer in developing the evaluation subsystem dealt with specifying relationships between qualitative educational outcomes (criterion measures) and the qualitative input variables which influence outcomes. This relationship, or production function, would not need to be investigated if the subsystem were merely to evaluate the gross output of two or more programs. But, in order to "adjust" outcomes to insure "fair" comparisons between substitutable programs, and to permit program diagnosis and subsequent improvement, these relationships must be known.

Figure 4 states the general form of the production function. It says, simply, that outcomes of the program are a function of (related to or hopefully caused by) (a) "program characteristics", which are defined as variables manipulable by program operators and developers, and (b) "constraint factors", which are defined as variables not manipulable by educators. Subsequent subsections of this paper will elaborate upon these three elements of the general production function.

FIGURE 4

General Form of the Production Function

$O = f(P,C)$

O = Outcome measures of the program

P = Program characteristics (manipulable by program developers and operators)

C = Constraint factors (not manipulable by program developers and operators)

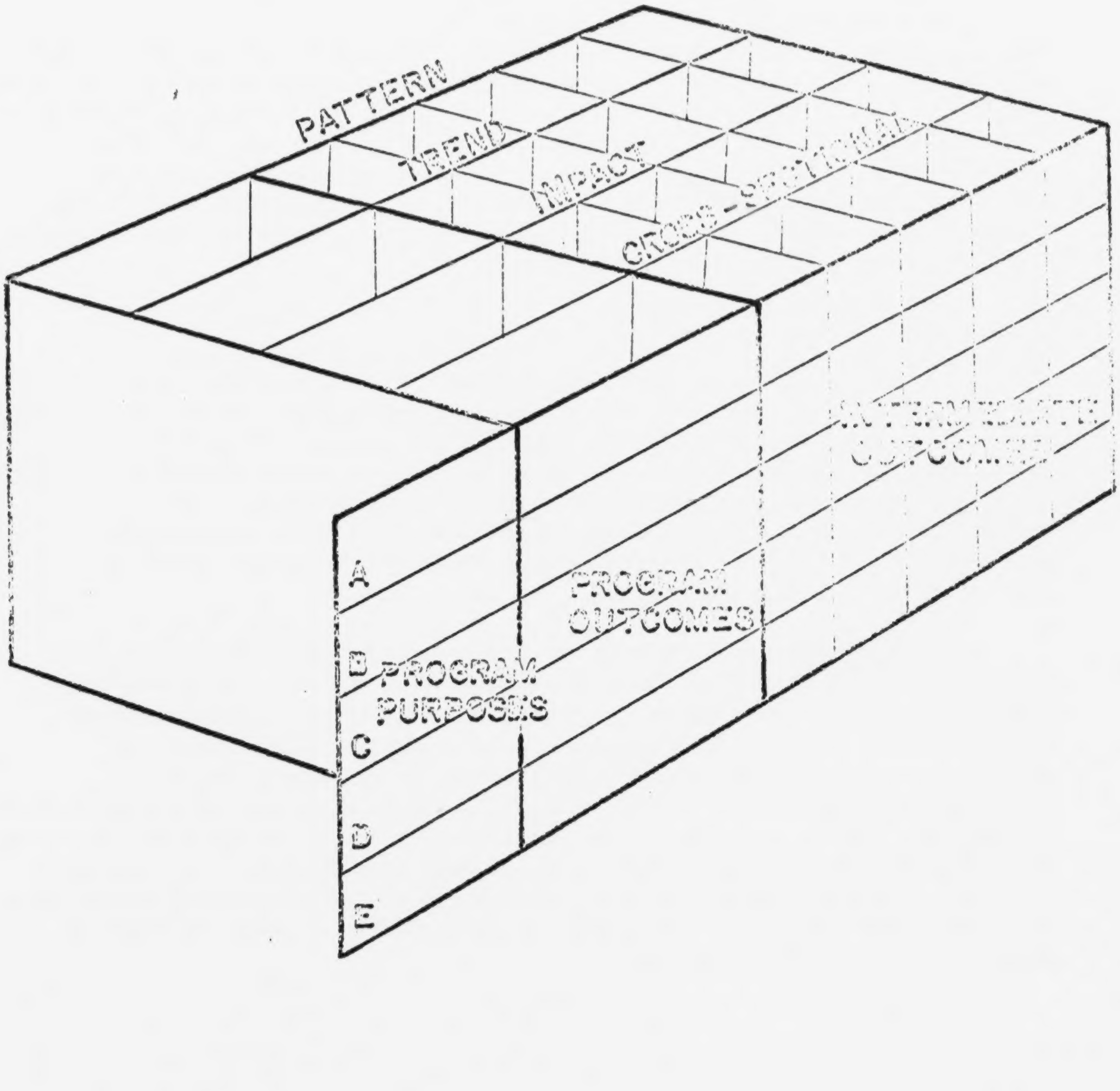
Outcome Measures

Outcome measures are indices of the degree to which program purposes have been attained; they are the criteria for evaluating and diagnosing program effectiveness. The subsystem being designed will employ a great many different outcome measures. Figure 5 presents some of the possibilities envisioned.

All outcome measures stem from program purposes. Some outcomes, called "program outcomes", are influences by the interaction of all program characteristics (P) and constraint factors (C). Program outcomes are direct indices of program purposes and are appropriate criteria for diagnosis and for evaluating the effectiveness of the total vocational program - all its interacting parts. For example, a measure of job satisfaction would be one such program outcome.

FIGURE 5

Matrix of Outcome Measures


PATTERN
TREND
IMPACT
CROSS-SECTIONAL
INTERMEDIATE OUTCOMES
PROGRAM OUTCOMES
A
B
PROGRAM PURPOSES
C
D
E

On the other hand, outcomes which are influences by only certain limited parts of the vocational program - not the total program - can also be logically derived from program purposes. Such outcomes, called "intermediate", are especially useful for, but limited to, diagnostic purposes because of their sensitivity to a particular part of the total program. Student desire to enter the pertinent occupation, measured at entrance to the training program, is such an intermediate outcome. It is sensitive to the guidance and selection portions of the vocational program, but does not at all reflect the impact of instruction during the program.

Outcomes can be measured at many different points in time. Intermediate outcomes will usually be measured while the student is in the program. Program outcomes will be measured at fifteen month intervals, up to four years, after students leave the program. At the point-in-time at which they are measured, outcomes are called "cross-sectional". A comprehensive cross-sectional measure is being developed which provides a weighted combination of different product outcomes. "Impact" measures are cumulations or averages of cross-sectional measures over some period of time. "Trends" are changes in cross-sectional measures over time. "Patterns" are relationships between trends; we think of them as particularly helpful research measures for investigating career development theories.

Program Characteristics

As previously noted, program characteristics are variables which are manipulable by program developers and operators. Measures of program characteristics are intended to describe programs. They serve to differentiate among programs on those variables which presumably affect quality, and which are therefore related to program outcomes. Hopefully, program descriptions can be obtained with reasonable objectivity and reliability since the measures will not provide the basis for direct evaluation.

A hierarchical classification scheme of program variables is being developed to permit logical aggregation of data on specific characteristics. For example, Figure 6 illustrates the five major categories of program characteristics. Guidance and counseling services, selection practices, instructional program, auxiliary services, and placement services are the highest level categories in the hierarchy. Taken together they describe the total educational experiences and related services provided by an agency and intended to culminate for each student-learner in new, continued or improved employment in a pre-specified occupation or group of occupations. That is what we mean by a vocational program.

FIGURE 6

Major Categories of Program Characteristics

(1) $O = f\ (P,C)$

(2) $O = f\ [(G,S,In,A,Pl),C]$

Program Characteristics (P) are:

G = Guidance and counseling services
S = Selection practices
In = Instructional program
A = Auxiliary services
Pl = Placement services

Figure 7 depicts a portion of the next lower level in the hierarchical classification of program characteristics. It shows that teacher characteristics, facilities, content, and methods of instruction are categories of variables which make up a part of the major category of "instructional program."

FIGURE 7

Further Expansion of Program Characteristics in the Production Function

(1) $O = f\ (P,C)$

(2) $O = f\ [(G,S,(T,F,C\ldots M),A,Pl),C]$

Instructional Program (In) is:

T = Teacher characteristics
F = Facilities
C = Content
M = Methods of instruction
Etc.

Constraint Factors

The third element in the general form of the production function is constraint factors. These are variables which influence program outcomes, but which are not manipulable by program developers and operators.

Note Figure 8. There are two kinds of constraint factors. "Relevant variables (while not themselves manipulable by educators) should be taken into account in program development and operation.

To illustrate, student characteristics and relative demand for workers in the occupation(s) for which the program attempts to train, both effect program outcomes; neither can be manipulated by educators, but both should influence program creation and operation.

FIGURE 8

Categories of Constraint Factors

(1) $O = f\ (P,C)$

(2) $O = f\ [P,(R,I)]$

Constraints (C) are:

R = Relevant variables (not manipulable by educators, but *should* be taken into account in program development and operation)
I = Intervening variables (not manipulable by educators, and *not* to be taken into account in program development and operation)

"Intervening" variables influence outcomes, but need *not* be considered in program development and operation. If employers discriminate against some minority group, the practice should not preclude training members of that group. The practice should be taken into account, however, when comparing that program's outcome with the outcomes of some other program. General employment level and the availability of higher education opportunities are also examples of intervening variables.

ANALYSIS

When data on outcomes, program characteristics, and constraint factors become available for two or more programs, the production function can be treated as an equation susceptible to regressional analysis.

In a comparison of two programs, the analysis will reveal the extent to which membership in a program is related to the difference in the average performance of the two groups of former students on each outcome measure. This relationship can be determined both before and after performance is adjusted for the influence of differences in such constraint factors as student characteristics and other variables which may be independent of program membership. The results of this type of analysis will produce reasonably "fair" evaluative comparisons between programs and will provide some clues for subjective program diagnosis and improvement.

When data becomes available for a large number of "substitutable" programs, regressional or centour analysis will then permit empirical tests of the extent to which any program or constraint variable, or combination of variables, contribute to the explanation of differences in average outcome measures. As one illustration, we could determine the relationship between teacher qualifications and the average job satisfactoriness of their former student-learners when all other program characteristics and constraint factors are held constant. In this manner, the subsystem will be able to make objective, empirical diagnosis for increasing program effectiveness.

It is recognized that the relationships revealed by the type of analysis envisioned are not necessarily causal. But given the logic of the production functions, the relationships found do provide a reasonable basis for assuming a degree of causality, especially when the predictive value of the independent variables in the production function proves to be high.

SUMMARY

In summary, the Minnesota Research Coordinating Unit is in the process of designing an evaluation subsystem which can be integrated with more complete management information systems, and which will yield evaluative and diagnostic information about the relative efficiency and effectiveness of individual program offerings.

To date, we have done little more than to conceptualize the problem, identify some of the modifying variables, and operationally define a few of them. Our progress is exceedingly slow because the task is complex and our resources limited. No deadlines have therefore been set for completion of subsequent stages of the project.

LOCALLY DIRECTED EVALUATION OF LOCAL PROGRAMS OF VOCATIONAL EDUCATION

by

Harold M. Byram*

There are three general strategies for bringing about evaluations of local programs of vocational education. One of these is what I would call a state initiated and/or state operated evaluation. In this type the state educational agency is generally responsible for determining objectives, developing criteria or criterion questions, and deciding on the scope and depth of data needed to answer them. The instruments are state developed and uniform for all districts. Those to be evaluated are chosen by the agency, which also administers the forms, usually through help of local personnel. State personnel often serve as observer-auditors, and as judges of the results of the application of these criteria. The process or input is examined as well as, or instead of, the product or output. The evaluations conducted in North Carolina, Ohio, and Pennsylvania appear to be this type. Minnesota recently conducted an evaluation of all its post-secondary, area technical schools after this pattern.

The second general strategy will be referred to as a state led evaluation of local programs. In this one a state agency or a university will provide a program to prepare local administrators and teachers to conduct their own evaluations with the aid of staff committees and advisory committees of citizens or of representatives of businesses and industries. They help prepare these local leaders to describe their goals and objectives; to formulate criterion questions; to develop or select instruments for gathering relevant data; to analyze and interpret the data; to study and interpret manpower needs and students' interests; and to effectively involve both staff and citizens in the whole process. These leaders make themselves available as consultants to schools on all these aspects, and help interpret the findings so as to generate recommendations for program planning and for improvement of local programs. Examples of these strategies are found in the Michigan Evaluation Systems Projects in 13 schools (2) and in the 20 schools of Arkansas, Minnesota, Mississippi and Nevada cooperating in the current multi-state project. (3)

The third strategy is independent local program evaluation. Here, a local district would, without previous training and/or consultant help, conduct its own evaluation. It probably would not necessarily report to any entity outside the district. The local educators might or might not conduct the study on as broad a scope as in the other two strategies that have just been mentioned.

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What are some of the merits, and the shortcomings or difficulties of each of these three strategies? In the state operated evaluations, since the instruments used would be uniform, the data could be combined for a state summary. Findings could be compared among the schools included in the evaluations. The total picture for the state could be constructed. Something of this sort might be interpreted as being mandated by the Federal requirement regarding evaluation of reimbursable programs. This approach could save local administrators and teachers considerable time and effort as contrasted with the state led strategy. All states need to relate state wide programs to manpower requirements to the extent that they are known by other State and Federal agencies. If the state agency were to conduct evaluations of local programs it would be in a position to recommend adjustments in programs calculated to meet these manpower needs. The chances of the agency being in a position to determine the relation of these programs to student needs would be much less, however. Another factor to consider is that a smaller input of local staff time and resources would be called for than in the state-led strategy. It would be expected, however, that this state operated strategy of local program evaluation would be met by something less than universal acceptance on the part of local educators and citizens. They ordinarily have shown only a token interest in how their school ranks with others. Then, too, the local decision makers would typically concern themselves first with recommendations from their own representatives if in relation to locally, well accepted goals and objectives. State operated evaluations have tended in the past to emphasize input or process. Since there is inadequate scientific basis for rating the process, however, this strategy leads to the use of authority as to what is "good".

The strategy of state led local evaluations may avoid some of these difficulties and shortcomings by providing for a process in which those who are responsible for, and those affected by the program conduct the appraisal for themselves. It does call for the training of local educators in processes and procedures of evaluation. This would have to be provided by the state agency or state universities. The input of state staff time and resources needed for this training program might not be available, short of contracts between local districts and a university or the Research Coordination Unit. Some local districts might not have resources sufficient to support such an effort. But they all do have local citizens and staff members who can work together. They can learn about, and can give consideration to students' occupational interests as well as to the reactions of alumni to the training received, and the reactions of those who have employed these former students.

The third strategy, independent local program evaluations, has the potential for maximum participation by those responsible for the programs - the educators, and those affected by the programs - the youth and adults trained or in training, the employers, the parents and other citizens. This maximum participation or involvement is an essential element. Note that I have said this strategy has this as a potential. This potential may not be realized, however, because of the lack of training in research that has been mentioned, and because of several problems already identified by those who have worked with local groups. A few of these will be mentioned.

Local educators generally have not stated the objectives or goals of their occupational education programs. Most of the stated objectives we have seen are not worded in such a way as to make it possible to assess the attainment of them. There is often a misunderstanding of the purposes of courses and programs on the part of many staff members and citizens.

Without stated objectives an evaluation of outcomes cannot become a reality. Most teachers are employed full time, and are not likely to become enthused about adding activities to their schedule. Some teachers are apt to feel threatened at the prospect of being involved in an evaluation. Many lack the necessary research and writing competencies, as well as abilities in successful citizen involvement and group processes. Some may experience a feeling of futility if adequate endorsement and support is not provided by the administration. This third strategy will work only if adequate training is provided to the local educators who will have evaluation responsibilities.

The focus of the remainder of this presentation will be on state led local evaluations. This is because of a strong bias toward local involvement and program planning and because of six years' experience with this strategy.

There are several things that people interested in locally-initiated evaluation have going for them. There is motivation because of the expectations at the national and state levels that local evaluations will, indeed, be made. It has been announced that local districts will be required to submit a short-time and a long-time plan in order to obtain Federal funds under the Vocational Education Act of 1968. Many employers and other citizens are increasingly showing concern about local programs, in terms of their adequacy, (a) to meet their perceived manpower needs, and (b) to meet the perceived career needs of youth and adults. Likewise, many educators not ordinarily identified with vocational education are manifesting an interest in and a concern about local programs. Finally, let it be recognized that there has been a gradual, grass-roots development of a general, workable procedure. Local educators and citizens need not be left to their own devices. Let us look at the essential elements of such a local program evaluation, and then examine the nature of a workable system.

ESSENTIAL ELEMENTS OF LOCAL PROGRAM EVALUATION

There must be a commitment by the local administration that goes beyond mere sanction or endorsement. Those who are to be involved in the activities of conducting the self study need to be assured that they have support for their activities; that resources for completing them will be provided; and that serious consideration will be given to findings or recommendations. In the school systems with which we have worked it has been shown in some cases that the presence or absence of administrative support was the element which, more than any other, contributed to the success or failure of the school self-study.

The next important element is a competent, strategically placed local leader. In schools that have the staff position of director or supervisor of vocational education, and where these schools have had such a person designated as the one in charge of the evaluation effort, satisfactory evaluations have, by and large, been conducted. This person needs to enjoy the recognition and professional respect not only of the staff members typically classed as vocational, but also of those of the practical arts, of guidance personnel, and indeed, of teachers of all curricular areas. Specialized staff persons such as curriculum consultants or directors could be considered, and their support should be enlisted.

The evaluation leader or chairman, and the staff committee working with him should be trained in research and evaluation procedures. It will be up to them to select, modify, or develop instruments for gathering or retrieving data; to monitor the data processing; and to scientifically analyze the data collected. It has been demonstrated that this can be accomplished through workshops and other structured, intensive instructional sessions.

The members of the staff committee may be representatives of the departments or occupational areas constituting the program. But in addition, other staff members should be active participants, including those in guidance, curriculum, and closely related disciplines. Our experience has shown that such individuals are often very helpful in developing a statement of philosophy and objectives of occupational education, and in relating the total school curriculum to them. Some of them also are less parochial in their interests than vocational teachers.

A fourth element that is essential is a functioning advisory committee or committees. Representatives of people affected by the local program should have a voice in evaluating it. But more than this, they constitute a source of valuable information that is basic to local program planning. Furthermore, citizens are more likely to accept and implement recommendations if they have been actively involved.

There may be one committee, referred to by some as a general advisory committee, charged with giving advice regarding the total program. There may be several committees, one for each occupational area. There may be a combination of these.

The members of these committees should be nominated on the basis of names solicited from the business and industrial community and other citizens. They need not represent, nor be named by an organization or agency. This committee would not be like those advocated by some and who refer to them as industry-education committees.

Because staff members will make a significant input into the program assessment in terms of energy and time, it is essential that they be provided time to work on the activities planned by the staff committee. While all members of staff in the system need to take part in discussions about overall objectives of the program, the general purposes of the evaluation, and the interpretation of findings, a committee of staff members most directly concerned has been found to be very useful. Staff time may be provided through released time, over-load renumeration, or enrollment in certification or university credit. Adequate clerical services need to be made available too.

Consultant services will, in many cases, not only be an aid, but also may be essential. This need not be from persons with expertise in a particular occupational field, but consultants should have an understanding of modern principles and programs of occupational education. They should be able to fill the role of consultant in a way that local educators want. (3) Persons in and outside the community with specialized competencies and experiences also may be used as resource persons.

Beyond these elements which have been categorized as essential, there are additional ones which would be designated as desirable by most people experienced in local program appraisals. The focus of the local problem evaluation needs to be on outcomes. This is not to say that the input elements can be ignored. But until there can be an auditing or appraisal of the output of a program there is really little basis for considering change in the input. The major question to be answered is: Are the results of the program commensurate with the expectations held by those responsible for and affected by these programs?

Another element that is desirable is that the scope of evaluation be broad. It should not be limited to programs that are reimbursable, nor to those that have been designated as vocational. If educators really mean what they say - that all programs of a school contribute to preparation for work - then an evaluation cannot be limited to certain grade levels, departments nor staff positions. Of course, many programs will contribute more directly to occupational preparation than will others.

May we summarize what has been said thus far through these two diagrams. The focus of local program evaluation should emphasize these elements: The output more than the input, the vocational aspects of the school program, the occupational and human needs and accomplishments locally, and the active participation of persons really most concerned with what the school should be doing in preparation for work.

Let us also briefly review the process, as it applies to self-initiated local program evaluation. (9) We must begin with the objectives and goals, as established by the educators and representatives of supporting clientele. The criterion questions are posed to enable local people to determine the extent to which the goals are being reached. The evidence that people are willing to accept as contributing to the answer of the questions is next in order to be identified, after which the factual information and opinion are gathered as the components of the evidence. This evidence is then interpreted in such a way that judgments can be made in regard to the criterion questions, and thus the degree of attainment of goals. Since improvement in the light of findings and their interpretation is the ultimate purpose, recommendations to be made to the decision makers must yet be developed and presented. Let us not forget that not only do administrators have decisions to make, but also faculty and citizens. Herein is the pay-off of local involvement.

We are ready now to examine more closely what some people have called a "System" for local program self-evaluation.

A SYSTEM FOR CONDUCTING A LOCAL PROGRAM EVALUATION

A local program self-study that includes the essentials and desirable features just outlined would include a number of steps. (4) The first of these is that of organizing for the study. This includes the general administrative authorization. It also includes the organization of a staff committee, or committees; and a committee, or committees of citizens. The next two steps to be taken concurrently are (a) describing the program of the school related to occupational preparation; and (b) stating the philosophy and objectives of occupational education of the school. The step to follow this is a very important one, deciding on the major questions to which answers will be sought. Typical of these would be: Is there a close relation between the placement record and occupational success of former students, on the one hand, and the program inputs in the school in the other hand? Is there a close relation between the occupational training needs of the area and current programs? Is there congruence between enrollments and programs on the one hand and occupational or career goals of students? Are there indications from an appraisal of needs and of output for expansion or contraction of programs or need for new programs?

Subsequent to the setting up of guiding questions the following three steps would be taken more or less concurrently. They are: (a) conducting a follow-up survey of former students; (b) determining the occupational training needs and placement and opportunities of the area (5); and (c) studying the clientele to be served. The function of the staff committee on evaluation, in relation to these steps, is that of developing plans and procedures for the research involved in them. The functions of the advisory committee(s) in these steps is to provide occupational information, public opinion, and advice; and to aid in conducting the public relations in connection with the several steps. The next step is that of analyzing and interpreting the information and opinion to answer the questions originally posed by the staff and citizens. The final step would be that of formulating recommendations.

EXPERIENCES IN LOCAL PROGRAM EVALUATION

It may be helpful at this point to relate some of the experiences obtained either directly or indirectly in the 13 school systems with which we worked in Michigan in two evaluation projects, and in the 20 school systems that have been involved in local evaluation projects in the states of Arkansas, Minnesota, Mississippi and Nevada.

This system - if it can be called that - has worked not only in local districts, but also in county units in the two states having them. Problems have been encountered, however, that are related to the autonomy of schools within the county, and differences among these schools in terms of clientele served.

The system has been tried out in schools operating area vocational and technical programs and appears to be operable, although there are differences among these, such as in the composition and functions of the advisory committees. It has worked in schools varying in size from 2500 to 30,000 K-12. It has not been tried in large metropolitan districts.

In cases where there has been a change of administrative personnel of the district, or in the personnel designated to give leadership to the local evaluation effort, this has had a retarding effect on the progress.

Strongly motivated leaders and staff committees sometimes have set tasks for themselves that would have called for more time and effort than what was available. More than one year is often required to complete all the steps previously outlined. Schedules of the completion of activities sometimes have been unrealistic. But this underlines the importance of careful planning by the local people involved.

One of the limiting factors in some cases has been the incomplete cooperation and assistance by some local school staffs. Some teachers have felt threatened by the thought of an evaluation. Some have been too strongly course - or subject - oriented, rather than program - oriented. This points up the importance of orientation and development of staff understanding about occupational education and the meaning of a program as contrasted with courses.

Several things, however, have been demonstrated by a number of school systems. It is feasible to obtain good staff and citizen involvements in evaluation. The examples I shall give are not to be interpreted as being the best or greatest accomplishment. They would include schools such as Anoka, Minnesota; Niles and Waterford, Michigan; Crossett, Arkansas; Cleveland, Mississippi; and Elko, Nevada. A few examples of schools that have conducted successful follow-up surveys are Corunna, Michigan; Russellville, Arkansas; Fallon, Nevada; Blooming Prarie, Minnesota; and Amory, Mississippi. Several of these, and other schools have had gratifying success in their efforts to get good feed-back information from employers through interviews, questionnaires and/or advisory committee meetings. One of the aspects that will receive more of our attention in the future is that of auditing the results of the application of the system.

It is always a subject of conjecture whether major changes or innovations occurring simultaneously, or immediately following an evaluation are truly a result of such a study. Perhaps a proposed change needed an extra "push" to get it adopted. But many schools, having conducted self-evaluations, have made curricular changes and have installed new programs where they did not exist before. Some have improved vocational guidance; established placement offices; developed shared-time arrangements with other school systems; provided for exploratory and orientation programs, and/or promoted area programs or schools. One outcome almost universally reported is the increased or improved understanding about occupational education on the part of the faculty and citizens. Objective evidence of this has not been available. To the extent that this better understanding is an actual fact, however, the long-range effect of this understanding on program planning seems evident.

THE CHALLENGE

It is quite obvious that in the immediate future the thousands of local school units throughout the country will want to initiate evaluations of their programs of occupational education. This will be true, regardless of what is done to evaluate statewide systems. These local systems will need help and preparation to do an effective job of it. Those present here, representing local school systems should, hopefully, leave with tentative plans for conducting self evaluations of programs in their schools, and for cooperating in statewide evaluations. Those who are in state leadership positions also have an opportunity here. This is to formulate plans for providing the leadership training for responsible educators in the many communities in the nation who should be conducting their own local program evaluations.

The urgency of improvement of local programs of vocational and technical education through evaluation and program planning in this country is too great to be left to chance. If the opportunity which local educators and citizens now have is not taken advantage of, there is a strong possibility that it may pass out of their hands. The potential for leadership in evaluation is there. Let us develop the potential!

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VIEWPOINTS OF A MEMBER OF THE NATIONAL ADVISORY COUNCIL FOR VOCATIONAL EDUCATION

by

Jack Michie *

I am already a little encouraged here tonight because there are five members of state advisory councils present and I believe that state councils can do a lot to improve vocational education. I'm also encouraged that there are four special participants at this conference and although I'm not too sure what special participants are, they must be something good or they would not be here; so at least we have that much of an audience that is not a typical vocational education audience. I think vocational educators have tended to talk to themselves and this isolation has fostered some misunderstandings and lack of appreciation for vocational education and has prevented the public from becoming aware of what vocational education is all about. It is not a discipline within the educational system; it is the education system as far as I'm concerned. It is preparation for one's life work.

I am afraid we are faced with a crumbling model of education whose basic strategies are out-of-date, out-of-touch and woefully inadequate. We should be working toward zero reject, but we don't do that at all; rather, we tend to screen people in who have the highest degree of ability and worry about them, but are generally unconcerned about those with low abilities. We have a general lack of concern for the average student which we find in our public schools today.

Sometime ago -- I think it was about a year ago -- Time published an article where they classified vocational education as the "junkyard" of the American educational system. Following that, I attended a conference where a group of wild-eyed hedonists virtually destroyed the reigning notion that American higher education was thriving; about a year ago then, things looked pretty grim, as far as I was concerned, and I'm not sure that they have changed a great deal since then.

It was mentioned earlier that I was a member of the Laney College staff in Oakland, California, and it was on a very recent occasion that I walked through a few of the classes in vocational education at Laney College, to take a look at what was going on. I would like to point out that Laney College enjoys a reputation as being one of the leading vocational education institutions in the country. As I walked through a graphic arts laboratory, I noticed they were still using hand-set type. They were still fooling around with linotype machines and hot type

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and way back in the corner, I even noticed an old Gutenberg press. I walked into an electronics lab where they were fooling around with vacuum tubes and the students were carefully tuning their "Atwater Kents" and cat whiskers on their crystal sets. All of this gave me some cause for concern.

When I asked the teachers why they didn't change these things, they said, "Well, the administration won't buy us new equipment, so we might as well just keep what we have." This is a rather discouraging type situation and although I say these things somewhat with tongue in cheek, I think we are possibly starting in the right direction and this conference may be an indication of that direction. We are beginning to take a look at vocational education and evaluate what we are doing. Confidentially, some of the roadblocks have been so paralyzing that I can't understand why we haven't done something about them before this. We have been faced with a consistent aura of conservatism in education and this is reflected in the dominant social theme of the times, particularly among the middle-aged, nondisadvantaged and perhaps middle-class members of the community. Look at your own personal reactions to the social revolutions we're experiencing today. I think most of you have read about San Jose State College, Berkeley, and San Francisco State, just to mention a few in California, and reactions the public has expressed through the news media. We seem to be experiencing a time when students the world over are crying for relevance, while many educators have been content with programs which have not changed much over the years. We are experiencing a time when new developments are occurring everywhere outside the educational sphere. This cry of youth, and I think they represent the largest segment of the revolutionaries, has manifested itself in sit-ins, strikes, and even bombings and wanton destruction. Over 44 percent of the civil disorders in this country in 1968, according to the Lemberg Foundation, were founded in schools.

One of the principal problems in vocational education, and remember, I hold the opinion that vocational education is education -- is the fact that we won't let anything go -- ever. We hang on to the vacuum tubes in the electronics classes, we hang on to Gutenberg presses in the printing classes, and we even hang on to the teachers who teach these classes and promote the very ideas that inhibit our progress. We don't worry about these teachers updating themselves or upgrading themselves and making a viable type of program. We hang on to teachers for the personal side of the thing -- "the humane reason" perhaps. We worry about what teachers would do if they can't teach that class which is completely out-of-date, and on the other hand, we worry precious little about what this same teacher is not doing for the students.

Some of the constraints I think we face lie in the hidebound tendencies of the establishment, for example: the snobbery we express in selecting only the most able people is gradually leading us to economic and social ruin. Tradition in the occupational areas and specialization in vocational education is causing us to loose sight of the objectives of vocational education. Vocational education is preparation for employment and not for a life as a farmer or a mechanic and that's what we tend to make it.

Teachers' standards? In T & I, particularly, I think we see some teachers' standards that are unbelievable. I've heard it said that the best thing that could happen to teacher education is to capsule it into a six week summer session and discourage attendance. I think rigid adherence to a time sequence, stating that everyone must go to school X number of semesters or three nights a week or 160 clock hours are some of the constraints we have to grabble with. The failure to recognize that someone might have learned something someplace else rather than in the classroom that we hold so dear, I think, is one of the principle ingredients of trouble. What does time really mean anyway? Would it not be much better to think in terms of required objectives and reaching them? It seems to me that the time is right for change, but where does change begin? I think that one place it begins is with the school boards, and I dare say that most of the people here have never attended a school board meeting except to, perhaps, listen to the salary negotiations that went on in the meeting, or to make some kind of a nice presentation where the school board members gave a nod of approval then went on about their business. I think school boards are usually made up of community intellectuals who are generally uninformed about vocational education and will foster the academic education as long as we allow them to do it. I say "we" allow them to do it because I classify myself as being one just as guilty as those I have criticized.

Let's take, for example, a public high school in Oakland, California, and look at its economics. This particular school sits in the middle of Oakland, which is one of the target areas as far as poverty is concerned. The school is attended by students of whom 99.9% are black; students who will never go on to college -- traditionally, fewer than 1% of the graduates of this school will attend college, and yet most of them, over 95% of them, are enrolled in either general education or college preparatory programs. Something's wrong!

Let's take a look at Mt. Olive school district in Alabama. The Mt. Olive school district has about 1,000 graduates a year. Of these graduates in the past five years, five have gone on to college and they have no program of vocational or occupation education whatsoever. Something's wrong!

There are over 58 million students in this country at any given moment and 40 million of them will never see the inside of a college. And yet, how many school boards stop to realize this when they start to apportion money for programs. Please don't misunderstand me. I don't think that liberal arts or college preparation is bad. It's not that at all. It's the system that's faulty. And maybe we should throw the baby out with the bathwater and start over in some of these areas.

Change in public schools is most likely to come, I think, through encouraged innovation. We have to encourage innovation, and we don't do that. I believe, for example, if we were to put 80 percent of our funds into maintaining the system and 20 percent of our funds into innovation, we could encourage a great deal of innovative activity. How many school districts represented by this audience have a contingency fund to cover problems that they don't even know exist? I would venture to say very few, if any; but we scrape up the funds when the crisis arises and don't even bother to worry about the crisis until it does arise. I think we need year-round operations in schools with continuous employment of teachers so that students can come and go as they need to -- as they need to partake of the educational offerings that we have. These are samples of things we can do in a non-threatening sort of way to encourage innovation and change.

Professional preparation is something I think we need to look at very carefully as we evaluate vocational education. Teacher training is very sorely needed, and leadership training should perhaps occupy a higher priority. Without this we can never expect to move vocational education ahead and I think we must. I'm reminded of what Arthur Pearl once said, "The best thing they could do with the birth control problem in India would be to send a bunch of teacher educators over there and have them teach about sex. People would become disinterested and the problem would take care of itself." A careful look at teacher preparation would be a great starting point, I think, for an evaluation system. Teacher education programs and credentialing systems within the states are often pathetic if not paralytic. And I'm sure that each one of you can identify with some of the credentialing problems you have within your state. I believe it's time that we overhaul some of these things. The real question as we evaluate any part of education is "What are we doing for the kids?" and that's very simply stated and very real. That's where the whole problem lies.

Someone did a study in English not too long ago--I don't remember all of the details. They sent a group of kids out and told them what they wanted them to do, in other words they defined objectives. A few months later they were called back -- during the interim they hadn't had any formal classes at all in English -- and tests revealed they were doing a better job at what English teachers were supposed to be teaching than a control group who took the regular courses. This should tell us a little bit about English 1-A. Dr. James Popham at UCLA did a study on vocational education that was rather startling. He defined behaviorly two areas: carburetion in automobiles and power supplies in electronics. He then proceeded to identify students that he could match up in experimental and control classes, and he identified the best teachers he could find in each of the areas. He then brought some tradesmen in off of the street and had each, the experienced teachers and the tradesmen teach these groups of students. He found that in terms of learning, there was little difference. If anything, the tradesmen probably had a slight edge. I think these studies should provoke some thought about what we are doing in teacher education and what really matters as far as credentials and qualifications for teachers are concerned.

What to evaluate? I think you evaluate the scope and the goals of vocational education, the organization and administration of vocational education and I think we certainly have to look at the program results and what happens. What happens to people after they complete a program?

Evaluation is based on expectations and objectives certainly. Congress has said what they want out of the 1968 Amendments to the Vocational Education Act and I'm sure that most of you are aware that a great deal more money is going to be put into the Act this year. One day Congress is going to ask how we spent our money and what we did for people.

We need to look at the expectations of business and industry. What do they expect us to do in vocational education and how can we solicit their help in doing it. I think this is largely overlooked as we plan our vocational education programs. Certainly we have advisory committees and we have them meet, usually to come and agree to what we want them to agree to; and give a stamp of approval to our activities, but this isn't the way we need to use advisory councils. I think we need to listen to them and we need to listen to the students to find out what their expectations are. And as you evaluate vocational education -- if you do these things and don't just look at the nice programs -- I think that something good can come from it. We need to listen to the recommendations of experts, and I think there are some experts around. We need to listen very carefully to what they have to say and examine our programs in light of their recommendations.

I think to sum it all up -- what I'm really talking about, in terms of youngsters, is loss of meaning. A loss of meaning that young people feel in their lives and in their institutions. I think students search for meaning in truth and untruth, change and decay. And I think we all have a part in this search. They are looking for meaning in frustration and ease, agony and joy, in winning and losing, having and not having, violence and communication, grooving and being uptight. Meaning comes from experience, and I can cite one experience where a skill center basketball team made up of all black losers from a poverty area, that had never participated in any kind of competitive sport in their lives, suffered a crushing defeat at the hands of a police basketball team, and were commemorated for their sportsmanlike conduct. I think somehow they found meaning in defeat.

I think of a co-op buying agreement where a group of students got together to help poverty-stricken people buy at the right kind of prices, and spent tremendous energy in doing this, somehow they found meaning in service. I can remember a student apologizing for humiliating another in a moment of thoughtless anger; and I think that somewhere we are finding meaning in communication. I can remember faculty authorizing pay deductions to provide student loans and I think somewhere we're looking for meaning in sacrifice. I can remember a student who stole equipment being hired to watch over and guard equipment, and I think somewhere we're trying to find meaning in compassion. And I can remember a young militant who only a few months before had held the president at gunpoint, tutoring teenaged girls on a hot summer day; and I think somewhere we're finding meaning in the whole range of human hope.

If we're to conquer the problems of education, as I think we must, we cannot be less than serious. We are going to have to prove that virtue comes with commitment and the right action and not from testimonials or past performances. We're dealing with a process which, in fact, is life-long learning.

Now as a finale to all of this--and I always like to hear someone say "finale"--I'd like to give you a little bit of what the National Advisory Council thinks. I helped draft this paper and I'm not going to read the whole paper to you, but I'm going to cover the points. These are the things that the National Advisory Council is committed to:

1. See to it that career planning is provided for each citizen.
2. Assist persons to develop an interest in vocations and pursue occupational exploration.
3. Encourage the student to participate in varied work experience so he can identify and accept for himself the dignity of occupational choice.
4. The strengthening of occupational choice and evaluating the relevance of the total occupational process.
5. The initiation, encouragement, and support of cooperative effort among all elements or components of the educational system in the nation.
6. The elimination of artificial barriers to success in personnel development, and encouragement of flexibility in facilitating and capitalizing upon the differences and strengths which individuals possess.
7. The encouragement and support for creative and innovative programs, and a continuous pursuit of financial support for vocational education, and a development of a national plan for vocational education to prepare people for work, and a monitoring system which will provide for effective evaluation.

Now, earlier, I fired a few salvos at Laney College, so I'd like to redeem that institution for just a minute if I may. This is from a statement that we prepared a while back and I might just go over it. Laney College, first of all is a public junior college of some 10,000 students; 5,000 during the day and about the same number during the night. It has a black enrollment of about 30%, 10% Mexican-American, 5% Oriental, so you can see it's about 50% minority. At a time when Berkeley, about five miles from Laney was exploding, while San Francisco State across the Bay was strike-bound for four months, and, while the College of San Mateo, San Jose City College, and San Jose State College--all within 15 miles of Laney--were undergoing the agonies of what we call student unrest, Laney College was gaining recognition as a community college with a predisposition to change, as well as an uncommon ability to keep its students happy.

What made the difference? Why, in the super-charged atmosphere of student dissent and community violence -- was there 26 bombings in the space of five months, including an attack on the police station and the courthouse? Some of you probably remember the Harvey Newton trial, neither of which of these were more than ten blocks from Laney Campus. Why, then, did the students at Laney College choose to work in cooperation with administration and faculty to produce peaceful change? Whatever else we did at Laney and I think we had some magnificent students, faculty and others. We had these advantages. Thirty percent of our students were enrolled in vocational education. Now that may not mean much to some people, but it's a simple fact that vocational majors, craftsmen, skilled craftsmen, and so on, are better credit risks than the average citizen -- or teachers, for that matter. They are less prone to suicide, divorce and alcoholism than the average American. They are less likely to move from city to city frequently, less likely to change residences frequently and I suspect much less likely to use unspent energies in violence, fighting and demonstrations. Most of our students -- from 60 to 80 percent work while they go to school and I must admit that most of the innovative approaches we invoked were aimed at getting students jobs while they were with us. We had to "massage" the rules at times but the facts were they needed jobs. They not only needed them as an economic fact of life -- they needed them to experience some of the relationships between identities in their own universe. They needed them as laboratories to test experiences and principles we'd preached to them in class. We let our students join us in the business of running our enterprise. We let them help us plan, help us set priorities, help us spend our money, help us teach their peers and help us find ways in which the college could better help to save the city life as we wanted it.

The point here is that the atmosphere which was created at Laney College is the atmosphere the students the world over say is the only relevant one; an atmosphere of participation. Meaningful participation, I have learned, is participation in the world of work, very practical relevant work. It is the binding force which connects emotion, muscle and intellect, with a disciplined fusion that makes experience real.

If we wish to make education relevant, if we wish to make the schools real, if we wish to fulfill our obligations to young people, and if we wish to give them a future better than the past, then we need to reconstitute our total educational system so that vocational education becomes education. There is no other kind.

FOLLOW-UP PROCEDURES FOR VOCATIONAL EDUCATION STUDENTS

By

Richard Whinfield*

My topic could well embrace the whole framework of a research study, from the point of identifying the problem to the implementation of findings for "follow-up" is merely a technique for gathering data and is related to "the grand design." However, I have not been asked nor do I choose to talk about design in any detail. I will direct my remarks primarily to the processes associated with the various steps in conducting a follow-up study, including some of the dangers to which one should be alert, and some precautions which are worth consideration.

First, let me briefly define a "follow-up" study.

"A follow-up study is an attempt to accumulate relevant data from or about a group (or groups) of individuals after they have had certain similar or comparable, experiences or who have certain similar or comparable characteristics."

This is not meant to be a precise definition. Its importance lies in the fact that "follow-up" implies the collection of data about something which takes place after the fact--that time has elapsed.

Our normal conception of a follow-up is the utilization of a follow-up mail questionnaire. This is a frequently used process and the one which I will discuss in some detail. But I would like to point out that many kinds of data can be collected about people without a mail questionnaire. Arrangements can sometimes be made (though it is increasingly difficult) to obtain income data, job descriptions, certain demographic data, from institutions such as departments of taxation, U. S. Census Bureau, employment services and schools or individuals such as teachers, parents, friends, and employees--in fact, any institution which keeps records, or individuals who have had direct and continuing contact with the student. There are problems however if data is to be supplied from records. Schools for example differ one from another in their efficiency of record keeping, in their definition of information and in the kind of information reported. The problems associated with this source of data may, in fact, be overwhelming. But I am getting ahead of my topic.

What Determines the Use of a Follow-Up Study?

The decision of whether or not a follow-up study should be conducted should evolve from an analysis of what questions need to be answered, what problems need to be solved--the decision of whether or not to conduct a follow-up study, is merely a part of the research design process.

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While I do not plan to discuss research design in any detail, I cannot ignore it. The design of a study may, in fact, be the most significant aspect of a study. Starting with a clear statement of the problem, all activities associated with the process of obtaining data as well as the data itself, must be interrelated in such a way that the results are as nearly valid and reliable as possible. There is no substitute in my opinion for thorough, careful planning.

The design does not start with the decision to do a follow-up study. It starts with a statement of the problem. It then proceeds to the identification of the kind of data needed to solve the problem. Then, if the best way to get this data is a follow-up technique, the process of getting this data is determined. It will frequently be a mail questionnaire, but other sources of data should not be ignored.

Some Purposes Served by a Follow-Up Study

There are, in my opinion, three purposes served by follow-up studies. The first is to obtain descriptive data about what has happened to people, the purpose of which perhaps has its greatest usefulness in predicting, with limited accuracy, what may happen to subsequent similar groups. It may also have some public relations values. But it has, in my opinion, limited evaluation potential, for it requires arbitrary judgment to conclude whether the description is good or bad. What does it mean if 80% of the T & I graduates are in T & I occupations? It merely says that this is one route for 80% of some kinds of youth to get into T & I occupations. Is this good or bad? To make that value judgment it might be but to ask--"Compared to What?"

A second purpose of follow-up may be to elicit evaluative responses of former students about their educational experiences. What was important to them? What was unimportant? What changes can be suggested? This is kind of advisory information.

As an evaluation or advisory device, a follow-up study has some usefulness, but it must be kept in mind that the respondees have a limited knowledge of alternatives, and each respondee speaks out of a different frame of reference. One student will praise the teaching because he got good grades, another might condemn the teaching because he got bad grades. Yet, one finds an occasional consensus which is useful.

The most useful purpose of a follow-up study, in my opinion, is a comparative one. There are numerous comparisons which can be made. Dropouts, academic students, students from different schools, students from other states, students from different courses. There is one kind of a comparison which I think would prove quite revealing. Instead of establishing a universe from students, establish a universe from employee groups. Of all the electronic technicians in a given area determine their route of entry and measure the relative frequency and level of attainment of vocational graduates as compared to those who came into the occupation by other routes.

What Determines Whether or Not a Mail Follow-Up Procedure Can Be Used?

Assuming that the problem is clearly stated, the following considerations should be made to determine whether or not to conduct a mail survey.

(1) What kind of data is needed?
(2) How much data is to be obtained?
(3) What are the sources of data?
(4) How much time is available?
(5) What is the size of the group or groups to be studied?
(6) How much money is available?
(7) What is the availability and competency of the staff?

There are few guidelines outside of common sense and good judgment for making this decision. It is known, however, that good follow-up studies can be costly and very time consuming.

Components of a Follow-Up Study

There are four major components of primary concern in a follow-up study. The first deals with the persons to be included in the study, the second with the data gathering instrument, the third with the response rate, and the fourth with data handling and treatment. Most of the rest of this paper will deal with these four components.

A. The Groups

An accurate definition of the group or groups to be studied may sound like an unnecessary admonition, but if the wrong people supply the data the study is not valid. Our assumption is that we are going to follow-up vocational students. But define that student. What courses are you concerned with? How many hours constitute a "vocational student?" What year of enrollment, of completion, of dropout, are you concerned with? This definition is important for establishing the universe to be studied. The universe is made up of all those persons who meet your definitions. You may decide, on the basis of time, money, staff, data processing and statistical techniques to follow-up the whole universe or to sample from the universe. If sampling is used it is useful to have some statistics about the universe to get a measure of the representation of the sample.

Whichever your choice, certain important data about the group to be contacted included: correctly spelled names, latest obtainable address, name and address of parent or next of kin, and any other data required by the definition (year of graduation, courses, etc.).

B. The Questionnaire

If the wrong data is obtained, the study breaks down. The development of a good questionnaire is a very difficult process unless you are seeking only minimal information.

There are certain bits of demographic data which are desirable in almost any follow-up questionnaire: age, sex, marital status, new address. Even these have some problems. For example, how precisely do you want age? The greatest precision can be obtained from a reported date of birth, less precision by reporting years and months, still less by reporting years, and least precise (unless not asked for) from categories--(18-20, 21-23, etc.).

Marital status is also a difficult variable to deal with because of alternatives--single, married, widowed, divorced (how often) and separated. How this is asked should be done in light of how you intend to use it.

a. Problems

There are numerous problems associated with other frequently sought information. All of them cannot be discussed here. Four problems will serve as examples.

(1) In studying vocational education, we are usually interested in what jobs students hold. In response to the question, "What is your job?" varied answers are sometimes given. Unusual titles are given such as C.E.T., Service Writer; or broad categories like technician are used, (of what?); or the name of an industry is given. These unidentifiable responses may be reduced by asking for a job title with some examples and may be followed with a question, "What do you do on this job?" There are two difficulties here--one is the nature of the definition and job description of different employers, and the second is the nature of the response.

(2) If a job history is to be obtained care should be taken to provide for a check on the reported time elements. Does the amount of reported time total to the elapsed time? There are certain problems associated with this. Girls will report "housewife" and "job" as coterminous full-time occupations. Part-time employment may overlap full-time employment. Unemployment is difficult to differentiate from "not on the labor market." How do you treat Armed Service experience? There are a number of knotty problems associated with these variables.

(3) Income also presents a problem--should it be obtained as hourly, weekly, monthly, or yearly income? Should take-home pay, gross or net income be reported? How does one treat income beyond job (investments, part-time jobs, etc.).

What about family income? There is also a natural reluctance on the part of respondees to report income, but not so great that a high percentage fail to reply. In one study we did, 82% of the respondees reported starting and present earnings. But it is difficult to assess the reliability of the responses.

(4) Evaluation questions are probably best done with some index scale. Should we use a two, three, four, five--up to a seven point index scale? Conflicting reports are made about the effectiveness of the size of the scale. Whatever size scale is used, does not change the general unreliability of the responses. A variety of conditions can influence responses, such as: the way the questions are asked--"How well did you like your vocational program?" is a positively directed statement. "How did you feel about your educational program?" is less positively directed. The difference in response because of wording can make a difference in objectivity. Another unpredictable factor is how a person feels on the day he responds.

Forced response versus open-ended questions is a further consideration. Forced responses are easier for respondees to handle, and permit reasonable acceptable statistical treatment. But they are dangerous in that they may not provide for all the alternative answers. Open-ended questions on the other hand, may be hard to categorize since the responses may be unrelated. For example--"What kind of further education have you had?" Some responses may say, "part-time," some may say "College" or "Welding." These are not compatible responses. Open-ended questions with long responses are extremely difficult to categorize for statistical purposes. The phrasing and design of some frequently asked questions might well be standardized to permit us to begin getting a consistent "fix" on certain kinds of data.

b. Format

It is generally conceded that the size of the questionnaire (number of items, and the physical bulk) is inversely related to the response rate. It is also related to costs, through increased printing, mailing and processing. The design of the questionnaire can be a factor in response--questions and any required definitions must be clearly stated and logically spaced. If it is designed for easy data processing and coding, this design should not interfere with an orderly format. Even the mechanical presentation should be considered. If it is in booklet form, will pages stick together resulting in a significant number of no responses? Are the pages assembled properly, is it legible? Is it mailable? Is it easy to return? All rather mundane questions but important considerations.

c. Pre-testing

It is usual that a questionnaire is pre-tested. The attention given to this activity can save hours of labor and significantly improve the response rate, reduce missing data, and increase the reliability of the questionnaire. This step is frequently given only fleeting attention. The questionnaire is given or sent to some pre-selected group and hastily scanned when returned. There is much which can be learned from pre-testing. Obviously this can be a measure of whether or not questions are understood by respondees, but of equal importance, some gross predictions can be made of response rate, coding process can be tested, significant comments about items and estimates of length of time to complete the questionnaire can be obtained.

d. Mailing and Postal Service

A researcher doing mail follow-up studies should be familiar with postal regulations. What factors should be considered--bulk mailing rates; how to charge returns; weight limitations; use of zip codes; length of time mail remains forwardable; return practices of unforwardable and address unknown letters; and a variety of other information.

C. Response Rate

Obviously, the response rate is directly related to the reliability of the information one gets about the students (address, name, etc.) and to the questionnaire, but there are a number of other considerations for improving response rate.

a. Letters

The response rate is directly related to the sources of the request for completing the questionnaire. A letter from a vague research center, signed by an unknown investigator is much less likely to draw a response than a letter from a teacher or principal of a school. The wording, length, and design of the letter is also of significance. There are no formulas for this. About wording--a researcher can appeal to the respondee himself. We have had an unresolved argument as to whether it is more effective to appeal to a respondee's social values (for the good of society, schools future students) or to his concern for the inquirer (please answer or I will lose my job).

Length of a letter is related to the complexity of the study. A general rule we have followed is to be brief, direct, and polite--less than one page. We have used a regular business form with a modest letterhead.

Postal cards can help, but seldom bring large responses. Their purpose is best served as a reminder, and prepares the respondee for receipt of a subsequent mailing. We are presently conducting an experiment of using a postal card as a first mailing to one-half of a group of graduates, it alerts the respondee that he will be receiving an important questionnaire, and urges him to fill it out and return it as soon as possible. A comparison will be made of the response rate of the two groups.

b. Other Devices

Other devices to obtain increased response include the promise of a gift, a cash payment, or, while I have not seen it yet, a sweepstake or contest. The mail order people have developed a variety of techniques to obtain responses. I am of the opinion, however, that social science research should use a "direct sell," an honest, straight-forward appeal. Confidentialness should be assured, and a preservation of the integrity of the mailing list should be maintained. Lists should not, in my opinion, be sold to merchandizers.

c. Schedules

It is difficult to say how much time should elapse between mailings. On a rapid mailing sequence (seven-day intervals) we have gotten better response than on mailing with intervals of two or three weeks. But this may be as much a function of the source or nature of the letter or of the respondees as of the mailing schedule. I prefer, from a research point of view to conduct a rapid mailing sequence. It reduces the errors in such items as are associated with time such as income (particularly if the study extends over January 1 and July 1 when raises are most frequently given). I also believe there is a demonstration of urgency which stimulates better response. This does pose the problem of duplicate returns but this can be managed if the recording of received responses is kept up-to-date. Some such duplication can serve a good purpose, in that it can provide a measure of reliability of responses. How many mailings are enough? This will vary, depending upon the response. Our experience shows three mailings of questionnaires comes closer to exhausting the potential respondents. Further mailings do not usually bring significant increased response. However, there is no adequate substitute for a high return. Invariably there is bias in a partial return. Generally, the lower the response rate, the higher the bias. On one of our studies with a 46.7% response, we found 78% return from respondees of the top percentile of high school class rank, and 23% from the bottom percentile.

d. Special activities

In achieving a return of 96.8% on one of our studies we used a variety of techniques. Invariably there are bad addresses, unforwardable mail, and address unknowns. To increase our response we contacted schools and parents for better addresses. For individuals who failed to respond, we contacted parents by mail or telephone and found a reluctance on their part to forward mail to men in service, or they just did not forward any mail they considered "junk." We almost always got a new address from the parents and in most cases obtained a response from the student. For persistent non-respondees, we used certified letters, which if returned, indicated we had a bad address, if not returned we were assured we had correct addresses, and could get an interview by telephone or in person.

City directories, internal revenue, automobile licensing bureaus, are all potential sources of recent addresses. There are services available for finding "lost" persons. Credit Bureaus will do this, but it is costly. Missing data, if important, can be obtained by further correspondence or telephone calls to persons who failed to reply to key items. Telephone numbers on a returned questionnaire are useful for this purpose.

D. Data Handling and Treatment

a. Handling data

There is no substitute for careful, up-to-date record keeping of mail outs and returns. This is necessary to keep mailing lists up-to-date, avoidance of duplication, accuracy of response rates, and evaluation of data. Prompt attention can be given to obtaining missing data and possible modification of questions.

b. Coding

A variety of techniques are used in coding. Coding by machine has not come into big use as yet. There are devices for doing this but there are problems associated with this, primarily of giving directions. Hand coding, or if pre-coded and direct key punching is used, errors do result. Careful verification is necessary. Our general procedure is to check every tenth hand coded return and if the error is 2% or greater on a given item we recode that item. Some coding processes involve verification coding on every item. Money and staff will dictate the verification process. All key punching should be verified. We are presently using a "digetic" form for hand coding which results in a key punched card directly from the form. But in spite of careful checking and verification, errors are frequently caught in first machine tests. We generally run what is known as "overview" program which reports frequency of punch for each card column and row. We then run "marginals"; total responses for each variable. Between these two and subsequent runs, coding and key punching errors can continually be reduced.

The actual coding of questionnaires frequently requires some specialization. Job categorization requires judgments as does use of pre-established scales. Poor writing, inappropriate responses, abbreviations and other problems require some expertise. The goal to strive for is consistency in handling each problem. Combining variables, coding in two or more ways, and a variety of other activities also requires close supervision of the coding operation. On large projects our coders specialize on difficult items.

The setting up of the codes should not be taken casually. Our general rule is that we code everything possible with raw data. We do not categorize continuing variables such as age or income. Where we plan to use information in several different ways, we may code information in two or more ways. But if the data is kept in its basic form we can transform and categorize by machine. It is axiomatic that you can do a variety of things with data which is present, but there is little you can do if the data is missing or presented in a bad way.

We have learned, too, to make duplicate cards of everything. On a hot, moist day the cards can be chewed up like confetti and create a real problem of replacement.

Here I will stop!

Treatment of data is your problem--it should have been determined in a broad way before you started collecting data. Write up, reproduction, and distribution are beyond my topic.

In conclusion, two general statements:

(1) There is no substitute for good data. While it is perfectly possible to treat the accumulation of data casually, without any reader of the final report being aware of the shortcoming, the integrity of a researcher demands that he do all in his power to get the best data possible.

(2) To assume this is an easy process, is a grievous error. The attention to careful planning, to thoughtful and conscientious control will eliminate many frustrations which come from treating and reporting data.

My observations and suggestions have only touched a few considerations. Our experiences have not solved all the problems. There are, no doubt, better procedures than ours. We are trying constantly to improve. While the "grand design" is of major importance, the attention to detail is a significant factor in achieving valid and reliable findings.

ARKANSAS VOCATIONAL STUDENT INFORMATION AND FOLLOW-UP SYSTEM

by

William C. Arnwine *

Introduction

The purpose of this system is to collect relevant data on students as they enter educational institutions, as they exit, and periodically after they have left the school. This information gathering system provides a very useful source of data designed to help school administrators make sound decisions regarding program improvement and program expansion.

Analyses of this data serve to measure the effectiveness of instruction, curriculum, and student personnel services. Specifically, such data can provide the bases for:

1. Improving the effectiveness of vocational-technical curricula, courses, instruction, and guidance.
2. Appraising the effectiveness of student counseling.
3. Evaluating the effectiveness of job placement services.
4. Determining whether curricula and instruction are adapted to the full range of student and community needs.
5. Identifying programs which are no longer of significant value to the student or the community.
6. Determining what combination of personal and educational characteristics produce the students who are most effective after leaving school.
7. Reducing the number of students who leave school before completing their programs.
8. Providing an abundance of research data for graduate students and other researchers.

The system may be used with students in secondary schools, as well as those in post-secondary vocational-technical schools; however, it was specifically designed for the latter. The system is presently being tested with both groups in Arkansas.

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* Dr. Arnwine was employed as Project Consultant by the Arkansas Research Coordination Unit in cooperation with the Department of Vocational Education, University of Arkansas, and the State Department of Education, Division of Vocational Education, Little Rock, Arkansas.

Rapid changes in technology demands continuous revision of technical instruction. Information from recently employed students provides one of the best means of obtaining an evaluation of course content, instructional emphasis and direction, and overall program offerings with respect to current manpower needs. Effective program design and improvement are critically needed, especially since two years or less is a short time in which to prepare students for vocational-technical and semi-professional careers.

The Vocational Education Act of 1963 and especially the Amendments of 1968, suggest the need for a data system to effectively and objectively evaluate vocational-technical education programs.

The Vocational Student Information and Follow-Up System is concerned with how well the students are prepared for their employment. It provides for the collection of data needed to answer several important questions:

1. Are the students receiving an education which permits them to start work with competence and assurance?
2. Are the students well received by their employers as evidenced by a higher rate of pay and rapid promotion?
3. What are the student's opinions and attitudes toward the type of training they received.
4. Is the training program supplying adequate numbers of skilled workers for the businesses and industry in the community?

Modern computer methods are used to facilitate the collecting, handling, and analysis of data into meaningful reports.

General Objective

The vocational student information and follow-up procedures developed are designed to provide data which will enable the school to better serve its students. Better service, meaning increased attainment of students' goals, is a result of improved educational procedures. Improvement is accomplished in the action phase of the student information and follow-up system.

Attitude and Conditioning

In order to convert information derived from the system into program improvement, there must be an attitude shared by both teachers and administrators which encourages objective analysis of the school, its purposes, methods and programs. There must be wholehearted cooperation during the process of collecting needed data and later when it comes to implementing recommendations which result from its analysis. Therefore, to be effective, there must be an effort to involve and inform all staff, as well as all students.

Explaining the systems purpose to students is particularly important because it affects their cooperation in accurately completing forms while they are in school and in returning future mailed questionnaires. Student response depends on the type of relationship they have with the school and on the extent to which the school conditions its students to react to the information system. There are several ways to accomplish desirable conditioning:

1. The most important method is perhaps attained through a good student-counselor-instructor relationship. With this type of relationship the counselor and instructor will be more inclined to keep a current file on former students and the student will be more inclined to supply current information.
2. The instructor can clear up misunderstandings about the questionnaires by projecting each form on a screen and describing them in detail. Copies of the forms may also be displayed on a bulletin board.
3. Enrollment and existing procedures should include informing the student that he will be expected to respond to future questionnaires.
4. Other possible conditioners include local and school newspaper articles, advertisements, bulletin boards, radio, and television. Some of these could occur continuously while others would be most effective at response time.
5. If the student is made fully aware of the purpose of the student information and follow-up system, he is likely to cooperate. Therefore, the benefits to all concerned should be emphasized, but one should particularly stress how other students will benefit from the system.

Description of the System

The information and follow-up system is composed of three important phases: Phase I is concerned with the collection of data, Phase II with the analysis of the data, and Phase III with decision-making and converting information into action.

Phase I - Data Collection. The data collection phase involves the use of three forms: the first form (FU1) is for enrollment data, the second form (FU2) is for exit data, and the third form (FU3) is for follow-up data. Copies of each form are attached to this report. Plans and schedules for using each form follows:

Form FU1 - The ENROLLMENT FORM FU1 is to be completed about two weeks after the student enters school or during the registration process if he enrolls late. The form identifies the student with respect to name, age, sex, and type of training desired. One person, preferably the school counselor, should supervise the group effort in filling out the forms to insure that each student understands what information is desired, and that he is completing the form correctly. The counselor should inspect the forms before they are forwarded to the State Department of Education Vocational Research Center for processing so that any necessary corrections can be made.

Forms are completed in duplicate with the original copy going to the Vocational Research Center and the carbon copy being retained at the school office. This form was designed for a dual purpose - it contains information needed for the student's school records, as well as information needed for the follow-up study.

Several steps may be taken to improve the accuracy and completeness of data on the form. For example, the student could be introduced to the form before he is asked to fill it out. With this knowledge the student has a chance to assemble data that he is not likely to have on his person. This could be accomplished best by providing him with a list of the information needed or by displaying the forms on a bulletin board and calling his attention to them. The forms might also be projected on a screen in class or otherwise presented to the students before they are to be filled out.

Upon arrival of FU1 forms at the Vocational Research Center the data is key punched, verified, and stored on magnetic tape to await computer processing.

Form FU2 - EXIT FORM FU2 is to be completed by each student about a week before graduation or whenever he leaves a program, whether it be a transfer, early departure, or for any other reason. Students need to be convinced that leaving school requires a formal withdrawal procedure similar to that required at registration time.

Best results can be attained when exit forms are completed by class groups. Students who were ill, looking for a job, or absent for some other reason, should complete the form soon after they return. Those departing early should fill out the form as part of the withdrawal process. Again, efficiency and accuracy can be increased tremendously if the counselors and/or instructors, will check the forms for any inaccuracies or incompletions before they are shipped to the Vocational Research Center.

Upon arrival, data from exit forms will be key punched, verified, and stored on magnetic tape to await future processing. The exit form is completed in duplicate, the original copy going to the Vocational Research Center and the carbon copy being retained at the school. For emphasis: Any time a student exits from a program - for any reason - an exit form must be completed and sent to: Vocational Research Center, State Education Building, Little Rock, Arkansas 72201.

Form FU3 - The computer partially completes the FU3 questionnaire by filling in the school name, personal identification data, and mailing address before it is sent to the former student at the address (good for the next several months) which he entered on his Form FU2. In the event the student has failed to complete his Form FU2, the FU3 is sent to his permanent address (from the FU1). After receiving it, the former student answers pertinent questions concerning his current status and returns it to the Vocational Research Center. The first mailout (PASS 1) data from the Vocational Research Center to the former student is scheduled for about September 25. (See the full-page flow chart which follows for a diagram of all passes.)

The FU3 form is pre-addressed and stamped so that it may be easily folded, stapled (glued or taped), and returned to the research center within the suggested ten-day period.

About October 15 a reminder follow-up questionnaire is mailed (PASS 2) to those former students who received the FU3 form from PASS 1 but did not return it in the time allotted. If the first questionnaire was unclaimed by the former student when sent to the address from the Form FU2, the FU3 form is mailed to the permanent address which was obtained on the FU1 form. Those whose FU3 forms were sent to the permanent address in PASS 1 and returned unclaimed are skipped over and handled in PASS 3. This mailing also occurs about October 15 and is identified as PASS 2B.

About November 1 PASS 3 is made to generate a list of non-respondents and those whose addresses are unknown. This list is sent to the school from which the student terminated, accompanied by a partially completed FU3 questionnaire for each person on the list. If accurate information is available, the school may fill in such forms and return the completed ones to the Vocational Research Center or preferably it can send the forms to the non-responders by whatever means the school deems advisable. The latter approach gives the school an opportunity to make a plea for cooperation among the non-responding former students.

A sample FU3 form is attached. Note that space is available just under the title for a computer printed statement. The computer prints the following statement for PASS 1 and PASS 2B:

THIS IS YOUR VOCATIONAL TRAINING FOLLOW-UP QUESTIONNAIRE.
YOUR ANSWERS WILL BE USED TO EVALUATE THE EFFECTIVENESS OF YOUR
TRAINING, EVEN THOUGH YOU MAY NOT HAVE COMPLETED THE COURSE.
YOUR ANSWERS WILL BE HELD IN STRICTEST CONFIDENCE.

A different statement is printed for the reminder (PASS 2A):

WE HAVE NOT RECEIVED A REPLY TO THE VOCATIONAL TRAINING FOLLOW-UP
QUESTIONNAIRE WE MAILED YOU 10 DAYS AGO. PERHAPS YOU DID NOT
RECEIVE IT OR IT PASSED THIS NOTICE IN THE MAIL. YOUR REPLY IS
URGENTLY REQUESTED AND NEEDED.

Phase II - Analysis. The Vocational Student Information and Follow-Up System will collect sufficient raw data with which to make a comprehensive analysis of statewide and local programs of instruction. Reports are generated not only for the purpose of measuring the effectiveness of present-day instruction, curriculum, and student personnel services, but to lay a foundation for planning future programs that best meet the needs of students and the community.

Computer programs have been written to produce the following reports:

1. After the FU1 forms have been processed, the computer prepares a class name list along with corresponding social security numbers. The list is in alphabetic order within each of the major Office of Education Coded classes offered within the school. These lists are sent to the school so that the roster can be checked for completeness, and the names, social security numbers and Office of Education Codes checked for accuracy. Missing names can be added and corrections made and sent to the Vocational Research Center. A name missing from the list will indicate that the FU1 form should be completed and sent to the Vocational Research Center.
2. A summary of selected data from the FU1 and FU2 forms is prepared by major Office of Education (O. E.) Title Codes (i.e., Agriculture, Office Occupations, Technical, etc.) for each school shortly after the FU2 forms are processed.
3. Information from the FU3 form is summarized for each school by major O. E. Codes about December 1.
4. After the FU1 and FU2 forms are processed, the School Report Form FU4 is generated to provide the school with the most up-to-date information that the research center has on each former student. It also provides the school with a means of updating the research center files with new information that is known only to the school. Two copies are sent to the school, a Director's Copy and a Counselor's Copy. This report shows the most current address and employer of each former student, and shows his current military status. It indicates whether the former student continued his schooling full-time.
5. A computer program has been prepared to retrieve and print out the data needed for completing the Department of Health, Education, and Welfare Forms O. E. 4045 and O. E. 4048.

A variety of non-standard reports can be produced to give greater insight into vocational-technical education programs. They can give a measure of effectiveness, indicate what techniques are most successful, show what training is most in demand, etc. These reports can be as detailed as needed and/or in summary form. They can be run to satisfy the data needs of state and federal administrators, local school officials, department heads, instructors, and former students in optimizing their effectiveness and efficiency relative to their job responsibilities and institutional objectives.

Reports may be generated on a periodic basis or on a one-time basis. Those requesting reports should realize that the systems programmer must be given sufficient "lead time" to write, refine, and test the computer program. Researchers and others in fields supportive of vocational and technical education, such as economics, psychology, and sociology, will also find the data and use of the system helpful. Graduate students should likewise find the system profitable for thesis, dissertation, and special studies work.

Questions and Answers

A number of questions can be answered by a system of this design. The following questions are very similar to those proposed by Patrick J. Mailey, Project Researcher, Vocational Preparatory Student Follow-Up System, State of Washington, in August, 1966:

1. Is the former student working in the occupation for which he was trained?
2. Is he working in a related field?
3. What percentage of vocational preparatory students find employment in related occupations?
4. Is he in the Armed Forces?
5. Is he continuing his education full-time?
6. Is he employed?
7. Was he hired because of his training?
8. Did his training contribute significantly to his progress on the job?
9. Did he seek employment in the occupation for which he was trained?
10. What was his beginning salary after training? Present salary?
11. Does the student feel his training was "worth it?"
12. Would he retrain in a vocational school?
13. What are the employment figures for male and female? Age groups?
14. How many students drop from a given course before becoming employable in the occupation for which the course trains?
15. How many employable former students have remained in Arkansas?
16. How many have moved to other states?
17. What is the average age of the vocational student?
18. What is the average income, by course, of students who are working in the job for which they were trained?

The foregoing questions are but a sampling of some of the information which can be made available after an effective follow-up survey. Finally, if the information has been collected in the source documents (the Entry Form, the Exit Form or the Follow-Up Questionnaire), then it is available for reporting in any sequence desired by those needing the information.

Suggested Uses

Suggested ways to use the information and follow-up system are:

1. Use it to emphasize the primary objective of vocational-technical education--"training for useful employment."
2. Use it with local boards of education and the state board for vocational education to show evidence as to services provided to people by the vocational-technical education program.
3. Use it with members of legislature and legislative committees to show the effectiveness of programs of vocational-technical education.
4. Use it with consulting or advisory committees to show evidence of placement and need or lack of need for training.
5. Use it to upgrade the public image of vocational training.
6. Use it for publicity purposes on the state and/or local level.
7. Use it at statewide meetings of local directors and supervisors to focus attention on:

   a. Employment and placement trends
   b. Reasons for good or poor placement
   c. Courses with marginal values
   d. Causes for lack of completion of training

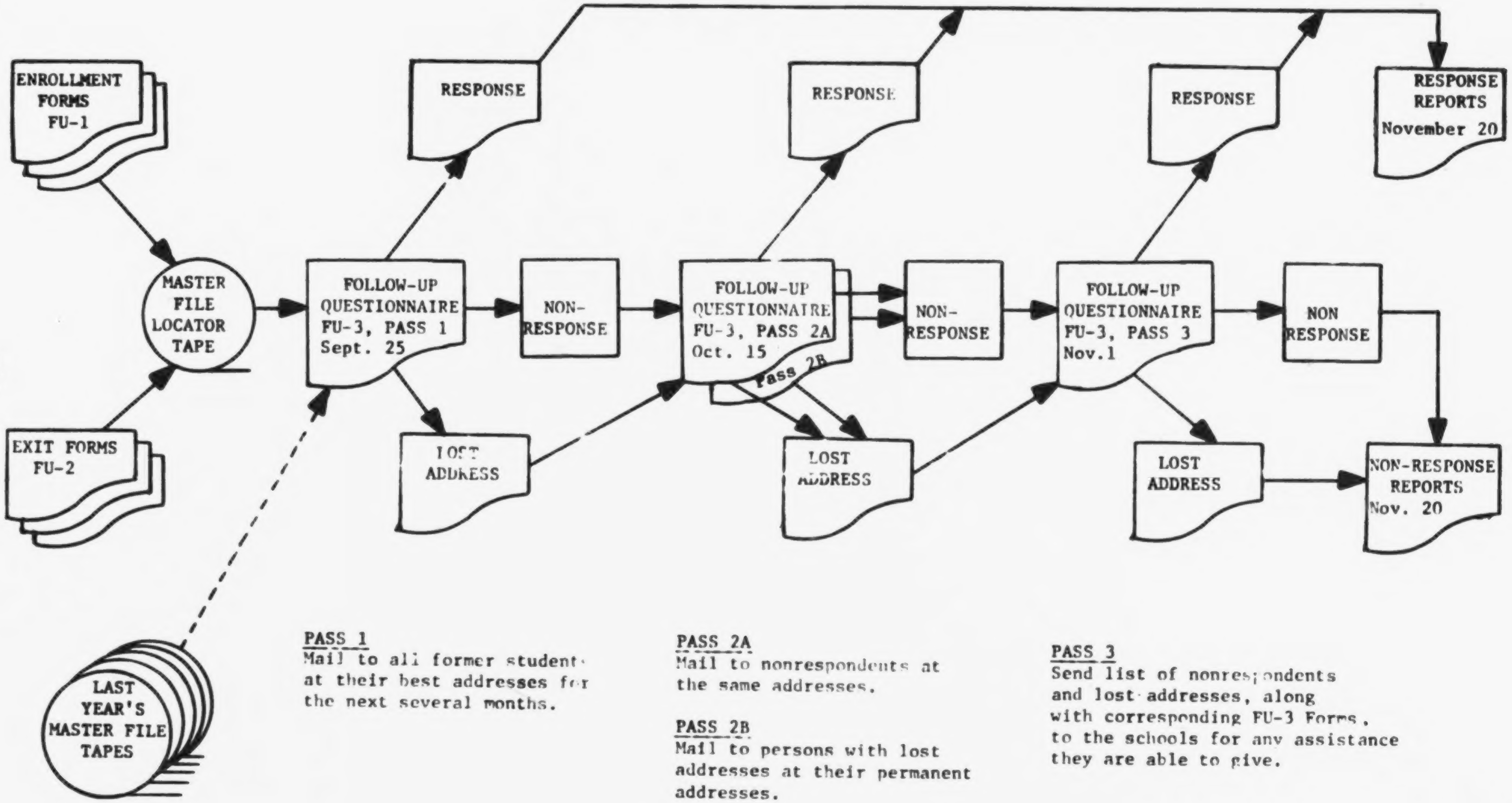
8. State supervisors can use it when consulting with local directors or supervisors to aid in recognizing the need for establishment, consolidation, reorganization and/or the elimination of training opportunities in certain course areas.
9. It may be used in working with planning committees when new schools are under construction or consideration as an indication of the variety of training opportunities available in the area.
10. Guidance counselors may use it when counseling students as to opportunities for employment in various fields.
11. Its major use is as a means of identifying the strengths and weaknesses in local programs.

Flow Chart - A flow chart which shows the scheduled flow of information from FORMS FU1, FU2, and FU3 follows.

Phase III--Action. This phase is a crucial one in terms of improving vocational-technical education programs. Administrator and teacher action is the key to this improvement in that administrators and teachers can implement the recommendations that result from this Vocational Student Information and Follow-Up System into new vocational-technical programs that are better in focus with employment opportunities.

ARKANSAS VOCATIONAL FOLLOW-UP

FLOW CHART FOR A PARTICULAR YEAR


ENROLLMENT FORMS FU-1
EXIT FORMS FU-2
MASTER FILE LOCATOR TAPE
LAST YEAR'S MASTER FILE TAPES
FOLLOW-UP QUESTIONNAIRE FU-3, PASS 1 Sept. 25
RESPONSE
NON-RESPONSE
LOST ADDRESS
FOLLOW-UP QUESTIONNAIRE FU-3, PASS 2A Oct. 15
Pass 2B
RESPONSE
NON-RESPONSE
LOST ADDRESS
FOLLOW-UP QUESTIONNAIRE FU-3, PASS 3 Nov.1
RESPONSE
NON RESPONSE
LOST ADDRESS
RESPONSE REPORTS November 20
NON-RESPONSE REPORTS Nov. 20

PASS 1
Mail to all former students at their best addresses for the next several months.

PASS 2A
Mail to nonrespondents at the same addresses.

PASS 2B
Mail to persons with lost addresses at their permanent addresses.

PASS 3
Send list of nonrespondents and lost addresses, along with corresponding FU-3 Forms, to the schools for any assistance they are able to give.

Such vocational-technical programs provide both men and women with marketable skills, which not only improve the well-being of the individual, but also promotes the economic development of the state. Implementation action should take the form of increased attention to constantly reviewing and updating curricular offerings and course content to insure the type of training demanded by business and industry and by our ever-changing technological society.

This system provides a medium through which educational programs can become more efficient as well as more responsive to student and manpower needs.

Summary

This information system should be of tremendous help to program planners, administrators, teachers, and others responsible for vocational-technical training programs. Valuable educational research is also possible since a large amount of information is collected, stored, and easily accessible from the computer tapes. Some of the information is collected while the student is in school, while perhaps the most important data is obtained from him after he leaves school. The follow-up forms are labelled and addressed by the computer before they are mailed to the students. After receiving the follow-up form, each student makes amy necessary name or address corrections and completes the form before returning it to the Vocational Research Center where the information is combined with that from the other forms to generate the desired reports.

VOCATIONAL-TECHNICAL EDUCATION STUDENT FOLLOW-UP PERSONAL INFORMATION FORM FU1

CARD NO. 1

Course (Dept.)____________________________

NOTE: WAIT FOR INSTRUCTIONS. ONLY ONE LETTER OR NUMBER IN A BOX, CHECK SOME - (✓)

Control number: ■ 1
1 2

Social security number: ☐☐☐ ☐☐ ☐☐☐☐
3 4 5 6 7 8 9 10 11

Last name: ☐☐☐☐☐☐☐☐☐☐☐☐
12 13 14 15 16 17 18 19 20 21 22 23

First & middle initials: ☐☐
24 25

PERMANENT ADDRESS good for the next several years (Home of parents or close relative):

Last name of kin: ☐☐☐☐☐☐☐☐☐☐☐☐
26 27 28 29 30 31 32 33 34 35 36 37

First & middle initials: ☐☐
38 39

____
Relationship

House No.: ☐☐☐☐☐
40 41 42 43 44

Telephone number: ☐☐☐☐☐☐☐
45 46 47 48 49 50 51

Street, Rural Rt., or P.O. Box:
If Box, write P.O. Box & No.
If Route, write RR before No.
☐☐☐☐☐☐☐☐☐☐☐☐
52 53 54 55 56 57 58 59 60 61 62 63

City: ☐☐☐☐☐☐☐☐☐☐
64 65 66 67 68 69 70 71 72 73

State____________________
Print state & abbr.
☐☐
74 75

Ar Ms
Ks Ok
La Tn
Mo Tx

Zip code: ☐☐☐☐☐
76 77 78 79 80

CARD NO. 2

Control number: ■ 2
1 2

Social security number: ☐☐☐ ☐☐ ☐☐☐☐
3 4 5 6 7 8 9 10 11

Highest education completed TO DATE:
1 ☐ Grade 7, or less
2 ☐ Grade 8
3 ☐ Grade 9
4 ☐ Grade 10
5 ☐ Grade 11
6 ☐ Grade 12
7 ☐ College, 1-2 yrs.
8 ☐ College, 3-4 yrs.
9 ☐ Four-yr. Grad., or more
12

Program NOW enrolled in:
1 ☐ Below Grade 9
2 ☐ Grade 9
3 ☐ Grade 10
4 ☐ Grade 11
5 ☐ Grade 12
6 ☐ Voc-Tech, Yr. 1
7 ☐ Voc-Tech, Yr. 2
8 ☐ Adult (Job entry)
9 ☐ Adult (Upgrade)
13

Sex and race:
1 ☐ White male
2 ☐ Negro male
3 ☐ Oriental male
4 ☐ Indian male
5 ☐ White female
6 ☐ Negro female
7 ☐ Oriental female
8 ☐ Indian female
14

WEEKLY pay before enrolling (gross):
1 ☐ UNDER $25
2 ☐ $25-49
3 ☐ $50-74
4 ☐ $75-99
5 ☐ $100-124
6 ☐ $125-149
7 ☐ $150-174
8 ☐ $175-199
9 ☐ $200-225
15

ADDRESS BEFORE entering this school:

House No. ☐☐☐☐☐
16 17 18 19 20

County____________________

Co. No. ☐☐
21 22

1—Arkansas Co.
60—Pulaski Co.
75—Yell Co.

Street, Rural Rt., or P.O. Box:
If Box, write P.O. Box before No.
If Route, write RR before No.
☐☐☐☐☐☐☐☐☐☐☐
23 24 25 26 27 28 29 30 31 32 33

City: ☐☐☐☐☐☐☐☐☐☐
34 35 36 37 38 39 40 41 42 43

State: ____________________ ☐☐
44 45

Vocational program: (O.E. code) ☐☐☐☐☐☐
46 47 48 49 50 51

School code: ☐☐☐☐☐☐
52 53 54 55 56 57

Miles to school: (one way) ☐☐
58 59

Date student enrolled in program: Mo. ☐☐ Yr. ☐☐
60 61 62 63

Birth date: Mo. ☐☐ Day ☐☐ Yr. ☐☐
64 65 66 67 68 69

____
Age

Do you ride the school bus?
1 ☐ yes
2 ☐ no
70

Type of student:
1 ☐ Full time
2 ☐ Part time
71

Are you:
1 ☐ Single
2 ☐ Married
72

Present date: Mo. ☐☐ Day ☐☐ Yr. ☐☐
73 74 75 76 77 78

Gov't. support to you, if any:
1 ☐ We & T (Work, Educ. & Train.)
2 ☐ VA (GI Bill, war orphans)
3 ☐ Vocational Rehabilitation
4 ☐ MDTA (Manpower Dev'l. Act)
5 ☐ Social Security
6 ☐ Work Study Program
7 ☐ Gov't. loan
8 ☐ Other____________________
9 ☐ No Gov't support
79

Type of* training: (See definitions below)
1 ☐ R
2 ☐ A
3 ☐ C
4 ☐ D
5 ☐ F
6 ☐ P
7 ☐ S
8 ☐ W
9 ☐ U
80

ADDRESS while in school:

____
Street, Route, or Box City County State Phone No.

____
School last attended City State Date last attended

____
College attended, if any City State Dates attended

*Definitions: (1) R-Regular enrollment, not special, (2) A-Apprenticeship, (3) C-Cooperative, (4) D-Defense related (tech. only), (5) F-off farm, (6) P-Persons, Special needs, (7) S-Semi-skilled program (T&I only), (8) W-Gainful employment course/Program (Home Economics only, (9) U-Under contract.

VOCATIONAL-TECHNICAL STUDENT FOLLOW-UP STUDY EXIT FORM

FU2

CARD NO. 3

Course (Dept.)____________________

Last Name____________________ First name____________________ M. I.__________

Control number ■ 3 (1 2)

Social security number: ☐☐☐ ☐☐ ☐☐☐☐ (3 4 5 6 7 8 9 10 11)

Will you complete the program before leaving school?

1 ☐ Yes
2 ☐ No

12

If no, why not?

1 ☐ Got a job
2 ☐ Lost interest
3 ☐ Subject too difficult
4 ☐ Had learned enough
5 ☐ Moved away
6 ☐ Other____________________

13

Which best describes your situation? Give your status when you EXIT:

1 ☐ Continuing school full-time (Academic)
2 ☐ Continuing school full-time (Vocational Preparatory).
3 ☐ Continuing school part-time.
4 ☐ Entering military service.
5 ☐ Employed in occupation for which trained.
6 ☐ Employed in related occupation.
7 ☐ Employed in occupation not related to training.
8 ☐ Attempted, but was unable to find employment, hope to soon.
9 ☐ Have not yet attempted to find employment.
0 ☐ Not interested in employment.

14

Total program course hours: ☐☐☐☐ (15 16 17 18)

Hours completed: ☐☐☐☐ (19 20 21 22)

Exit date: Mo. ☐☐ (23 24) Yr. ☐☐ (25 26)

ADDRESS good for the next several months: (WHERE WILL YOU RECEIVE MAIL?)

House No.: ☐☐☐☐☐ (27 28 29 30 31)

Telephone number: ☐☐☐☐☐☐☐ (32 33 34 35 36 37 38)

Street, Rural Rt., or P.O. Box:
If Box, write P.O. Box & No.
If Route, write RR before No.
☐☐☐☐☐☐☐☐☐☐☐☐ (39 40 41 42 43 44 45 46 47 48 49 50)

City: ☐☐☐☐☐☐☐☐☐☐☐☐ (51 52 53 54 55 56 57 58 59 60 61 62)

State:____________________ ☐☐ (63 64)
Print state & abbr.
Ar Ms
Ks Ok
La Tn
Mo Tx

Zip code: ☐☐☐☐☐ (65 66 67 68 69)

BEFORE you began your Voc-Tech training course, were you:

1 ☐ In school
2 ☐ Unemployed
3 ☐ Employed part-time
4 ☐ Employed full-time
5 ☐ In military service

70

Partially disabled? Employment limited?

1 ☐ Yes
2 ☐ No

71

If you have a full-time job after leaving school, how did you get it?

1 ☐ On your own, without anyone's help
2 ☐ Private employment agency
3 ☐ State employment service
4 ☐ Through parents (or relative)
5 ☐ Through personal friend
6 ☐ With or returned to same employer
7 ☐ Through school teacher
8 ☐ Through school counselor
9 ☐ Through school placement office
0 ☐ Other____________________

72

Check subject you studied most:	High school subjects:	Check subject next most studied:
1 ☐	Voc. Agriculture	1 ☐
2 ☐	Health Occupations	2 ☐
3 ☐	Home Economics	3 ☐
4 ☐	Distributive Ed.	4 ☐
5 ☐	Office Occupations	5 ☐
6 ☐	Trade & Industry	6 ☐
7 ☐	Technical Education	7 ☐
8 ☐	Took none of these	8 ☐
74		75

No. yrs. taken: (nearest whole no.) ☐ 73

No. yrs. taken: (nearest whole no.) ☐ 76

Was your high school program:

1 ☐ General
2 ☐ Vocational
3 ☐ College preparatory
4 ☐ Other____________________
5 ☐ Did not attend high school

77

CARD NO. 4

Control number: ■ 4 (1 2)

Social Security number: ☐☐☐ ☐☐ ☐☐☐☐ (3 4 5 6 7 8 9 10 11)

Employer (Firm) after exit: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ (12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28)

Address: (No. on street) ☐☐☐☐☐ (29 30 31 32 33)

Employment is:
1 ☐ Full time
2 ☐ Part time
34

Date hired: Mo. ☐☐ (35 36) Yr. ☐☐ (37 38)

Street, Rural Rt., or P.O. Box:
If Box, write P.O. Box & No.
If Route, write RR before No.
☐☐☐☐☐☐☐☐☐☐☐☐ (39 40 41 42 43 44 45 46 47 48 49 50)

City: ☐☐☐☐☐☐☐☐☐☐ (51 52 53 54 55 56 57 58 59 60)

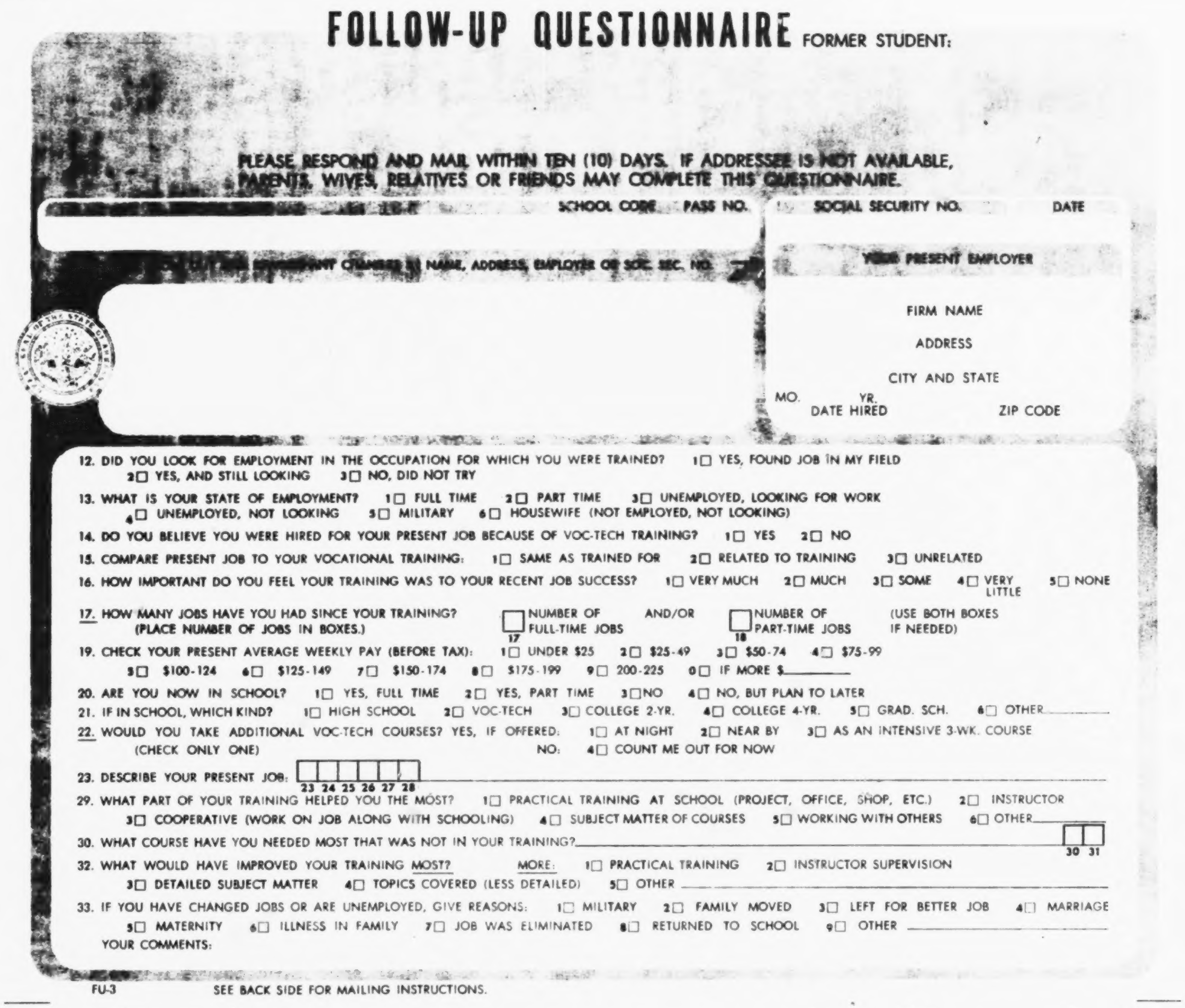
State ____________________ ☐☐ (61 62)
Print State & abbr.
Ar Ms
Ks Ok
La Tn
Mo Tx

____________________ ☐☐☐☐☐☐ (63 64 65 66 67 68)
Job description

Zip code: ☐☐☐☐☐ (69 70 71 72 73)

Please rate this school frankly on each of the following items:

Card Column	GOOD	FAIR	POOR	
74	1 ☐	2 ☐	3 ☐	Quality of instruction
75	1 ☐	2 ☐	3 ☐	**Physical condition of school**
76	1 ☐	2 ☐	3 ☐	Teacher interest in students
77	1 ☐	2 ☐	3 ☐	**Student guidance/counseling**
78	1 ☐	2 ☐	3 ☐	Job placement of graduates
79	1 ☐	2 ☐	3 ☐	**Reputation of school in the community**
80	1 ☐	2 ☐	3 ☐	Tools, equipment, training aids, etc.



FOLLOW-UP QUESTIONNAIRE FORMER STUDENT:

PLEASE RESPOND AND MAIL WITHIN TEN (10) DAYS. IF ADDRESSEE IS NOT AVAILABLE, PARENTS, WIVES, RELATIVES OR FRIENDS MAY COMPLETE THIS QUESTIONNAIRE.

[illegible] SCHOOL CODE PASS NO. SOCIAL SECURITY NO. DATE

[illegible] CHANGES IN NAME, ADDRESS, EMPLOYER OR SOC. SEC. NO.

YOUR PRESENT EMPLOYER

FIRM NAME

ADDRESS

CITY AND STATE

MO. YR. DATE HIRED ZIP CODE

12. DID YOU LOOK FOR EMPLOYMENT IN THE OCCUPATION FOR WHICH YOU WERE TRAINED? 1☐ YES, FOUND JOB IN MY FIELD
2☐ YES, AND STILL LOOKING 3☐ NO, DID NOT TRY

13. WHAT IS YOUR STATE OF EMPLOYMENT? 1☐ FULL TIME 2☐ PART TIME 3☐ UNEMPLOYED, LOOKING FOR WORK
4☐ UNEMPLOYED, NOT LOOKING 5☐ MILITARY 6☐ HOUSEWIFE (NOT EMPLOYED, NOT LOOKING)

14. DO YOU BELIEVE YOU WERE HIRED FOR YOUR PRESENT JOB BECAUSE OF VOC-TECH TRAINING? 1☐ YES 2☐ NO

15. COMPARE PRESENT JOB TO YOUR VOCATIONAL TRAINING: 1☐ SAME AS TRAINED FOR 2☐ RELATED TO TRAINING 3☐ UNRELATED

16. HOW IMPORTANT DO YOU FEEL YOUR TRAINING WAS TO YOUR RECENT JOB SUCCESS? 1☐ VERY MUCH 2☐ MUCH 3☐ SOME 4☐ VERY LITTLE 5☐ NONE

17. HOW MANY JOBS HAVE YOU HAD SINCE YOUR TRAINING? (PLACE NUMBER OF JOBS IN BOXES.) ☐ NUMBER OF FULL-TIME JOBS (17) AND/OR ☐ NUMBER OF PART-TIME JOBS (18) (USE BOTH BOXES IF NEEDED)

19. CHECK YOUR PRESENT AVERAGE WEEKLY PAY (BEFORE TAX): 1☐ UNDER $25 2☐ $25-49 3☐ $50-74 4☐ $75-99
5☐ $100-124 6☐ $125-149 7☐ $150-174 8☐ $175-199 9☐ 200-225 0☐ IF MORE $________

20. ARE YOU NOW IN SCHOOL? 1☐ YES, FULL TIME 2☐ YES, PART TIME 3☐ NO 4☐ NO, BUT PLAN TO LATER

21. IF IN SCHOOL, WHICH KIND? 1☐ HIGH SCHOOL 2☐ VOC-TECH 3☐ COLLEGE 2-YR. 4☐ COLLEGE 4-YR. 5☐ GRAD. SCH. 6☐ OTHER________

22. WOULD YOU TAKE ADDITIONAL VOC-TECH COURSES? YES, IF OFFERED: 1☐ AT NIGHT 2☐ NEAR BY 3☐ AS AN INTENSIVE 3-WK. COURSE
(CHECK ONLY ONE) NO: 4☐ COUNT ME OUT FOR NOW

23. DESCRIBE YOUR PRESENT JOB: ☐☐☐☐☐☐ (23 24 25 26 27 28) ________________

29. WHAT PART OF YOUR TRAINING HELPED YOU THE MOST? 1☐ PRACTICAL TRAINING AT SCHOOL (PROJECT, OFFICE, SHOP, ETC.) 2☐ INSTRUCTOR
3☐ COOPERATIVE (WORK ON JOB ALONG WITH SCHOOLING) 4☐ SUBJECT MATTER OF COURSES 5☐ WORKING WITH OTHERS 6☐ OTHER________

30. WHAT COURSE HAVE YOU NEEDED MOST THAT WAS NOT IN YOUR TRAINING?________ ☐☐ (30 31)

32. WHAT WOULD HAVE IMPROVED YOUR TRAINING MOST? MORE: 1☐ PRACTICAL TRAINING 2☐ INSTRUCTOR SUPERVISION
3☐ DETAILED SUBJECT MATTER 4☐ TOPICS COVERED (LESS DETAILED) 5☐ OTHER ________

33. IF YOU HAVE CHANGED JOBS OR ARE UNEMPLOYED, GIVE REASONS: 1☐ MILITARY 2☐ FAMILY MOVED 3☐ LEFT FOR BETTER JOB 4☐ MARRIAGE
5☐ MATERNITY 6☐ ILLNESS IN FAMILY 7☐ JOB WAS ELIMINATED 8☐ RETURNED TO SCHOOL 9☐ OTHER ________
YOUR COMMENTS:

FU-3 SEE BACK SIDE FOR MAILING INSTRUCTIONS.

VIEWS FROM THE CHAIRMAN OF A STATE VOCATIONAL ADVISORY COUNCIL

by

Caroline E. Hughes *

State advisory councils for vocational and technical education are reasonably new, resulting from the legislative Amendments of 1968, where their formation, support and duties were clearly defined. These councils are formed by a group of previously unacquainted people, with varied backgrounds of experiences, but mutual desires in education, social and economic progress. The diversified background of membership provides a knowledgeable and formidable resource for the evaluation of our educational process.

Advisory councils are organized to be working bodies, with authority for research and recommendation to state departments with whom the responsibility for implementation rests.

I will be interested in hearing if the activities of other state advisory councils parallel the programs of Oklahoma's. Since March an executive committee of chairman, vice-chairman, secretary and two members has been elected to replace the pro-tem officers first appointed. This committee represents a public school superintendent from a predominantly negro community; large industry in a metropolitan area; small industry in a depressed economic area; and industry of intermediate size whose manufacturing process and location is new in the state; and the general public. This committee will recommend to the Council and, with its advise and consent, will conduct Council affairs in the interim periods between quarterly meetings.

The Council has adopted by-laws which will provide effective guidelines for operation.

Members have served on nine committees set up by the State Department of Vocational-Technical Education to consider areas of inclusion in state plans. It has studied and discussed pertinent statistical information pertaining to employment needs and curricula.

Its membership has talked informally and frequently regarding personnel requirements for efficient and expedient Council operation, and attempted to define specific directions which an advisory group may prudently take. A general philosophy is evolving. Staff personnel is being thoughtfully considered, pending the crystallization of Council direction and budgetary appropriations.

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The Advisory Council is cognizant of an extensive and growing vocational and technical program under the excellent professional guidance of the State Department. It seeks to cooperate with the Department in an expanding program, yet maintain an objectivity to insure maximum advisory effectiveness.

In the interest of attending this institute as an 'Instructed Delegate', at the last meeting vocational-technical education evaluation was one subject on the agenda. You will be interested in the resulting comments.

The personnel and labor relations member from a metropolitan industry employing 6,000 people said: "Vocational-technical education is doing an excellent job in training for services. We are not getting the technicians we desperately need, and the vocational-technical school here is not providing adult programs to meet our needs. High school students lack the maturity and basic skills background for immediate employment in our plant."

Others commented: "There seems to be insufficient student knowledge of job opportunities on the non-college trained level. All want college for 'my son'."

"We need to develop attitudes for the world of work."

"We need to develop aptitudes -- better channeling in regard to individual potential."

"Too many students lacking emotional, mental and financial resources are being guided into college entrance -- and if they cannot quite make entry in a large university, they are counseled to apply to smaller colleges and junior colleges. Are they being misguided?"

We do not have vocational guidance at an early enough period in school. Junior high students should have better information regarding future employment opportunity and job training."

The president of a small state college with a strong vocational-technical curriculum asked: "Are we really teaching the right things? Or are we just teaching as we always have -- simply because we are hired to teach?"

This capsule of comments produced one illuminating fact: Most statements came back to counseling and guidance and the public lack of information regarding vocational-technical education availability and opportunity. It was a re-affirmation of earlier discussions by the Council regarding inadequate, and almost non-existant knowledge on the part of public school guidance people in regard to the total vocational-technical potential. A statement of this concern had already been made to the State Department of Education, with a request for a presentation to all teachers, certainly counseling and guidance personnel, at the state teachers meeting in the fall.

It becomes increasingly apparent that a fundamental consideration of vocational education must be in the area of public relations. If school guidance personnel are poorly informed in technical vocations --

how vast is the ignorance of the general public in the same regard?

Are our university programs helping to solve this deficiency? The university counseling curriculum offers remarkably few courses in industrial guidance. One young man of my acquaintance, currently a director of student services in an area vocational-technical school, commented that in over thirty college hours above the bacculaurate level, he had only three or four hours which could be considered industrial guidance. If he, as an industrial arts major feels this inadequacy -- one can only wonder about the guidance potential of other secondary education majors.

It would seem a real Madison Avenue approach is in order -- working from top and bottom -- university and kindergarten. If there are credibility gaps in vocational-technical education, is it in the program itself or a break-down in the knowledge of its potential?

Too often evaluation brings to mind criticism -- and too often negative criticism. What's good in vocational-technical education? Vocational programs have long been a part of education, and the earlier comment regarding good training for services is an example of long-term effectiveness. We are acutely aware of our changing society, and the technological age -- with demands for skills unheard of only a few years ago. Technical training -- massive though it is -- and developing at an accelerated rate, is yet in its adolescence. The number of relatively large schools offering a wide variety of programs has risen from the 403 that existed prior to the 1963 Act to the 1,171 operating early this year. It is simply an example of supply and demand, and time to bridge the gap.

The man on the street, the school patron, the parent, is not aware of the potential. He is not accustomed to thinking in terms of the $35,000.00 a year plumber -- not to mention the electro-mechanical technician! There's a real job correlation between social participation and take home pay.

In the minds of many there is still an ambivalence toward vocational-technical schools -- the association of trade schools for the educationally impoverished -- coupled with sophisticated new physical plants. The development of area schools, with new and modern physical facilities, new and modern equipment and curricula, is a potent factor in the 'grass roots' conception of the individual's opportunity and his place in society.

Many in this audience represent geographical areas which are historically industrially oriented -- with vast experiences in trades and crafts. I represent a state which has a strong agricultural and oil industry background -- with only a recent emphasis in widescale industrial development - made possible by the concerted cooperative efforts of many departments of the state and federal government.

New schools are opening new vistas in non-urban areas. In our state seventeen vocational-technical schools are operational or planned. Seven are operational, five by local and two by area district boards. Five area schools have let contracts for construction; two more are working with architects and three additional districts have been formed. Other states have similar systems. Some of the eighteen state colleges and universities have vocational-technical programs, including Oklahoma State Tech which awards the associate degree.

Last week I attended a 'Graduation' for Central Oklahoma Tech's Dalton Training Program where Governor Bartlett presented short course certificates to the seventy-six trainees. Members of his industrial staff were also in attendance. I'd like to share with you some of the background leading up to this event.

Though both the school and the manufacturing plant were on the drawing board or under construction, Central Tech, which serves thirty local districts in a 2,500 square mile area, in cooperation with the Special Schools Division of the State Department, designed and presented an industrial training program for a new state industry. The 'mother plant' out of state is a foundry -- but the new plant is the first all electric, fully air-conditioned, metal castings plant in the world -- incorporating the very latest in technological equipment. The term foundry is verboten, and the Thesaurus has really been dusted off for new ways of referral to the products of Dalton Precision.

Applications were solicited throughout the area; a testing program was instituted by the State Employment Security Agency and Central Tech staff; interviews were conducted by the industrial personnel director; the classroom was a rented downtown building; equipment was Dalton's (which was later moved into the new facility); instructors were from Oklahoma State University's Technological Institute; financing was shared by Central Tech and the State Department. This pilot program can only be classified as an unqualified success -- and a continuing program is in progress.

With regularity, a member of Central Tech's board on which I serve, makes the comment "The proof of the pudding is in the eating". Indeed, herein lies the answer to vocational-technical evaluation.

I recently heard an address by the employment administrator for North American Rockwell Corporation, Tulsa, entitled: What Business and Industry Expect From The Technical School Trained Students. A digest of his comments follow: "Business and industry doesn't expect the individual to be completely trained, but well trained, able to read, possess a background in mathematics and be motivated in the direction of his vocational area of specialization. All vocational-technical graduates must be able to read, write, and communicate in the technical language common to his area of specialization."

"If the individual is motivated toward his chosen field, then industry can afford to continue his training. In dealing with people I find that they must learn how to sell themselves and how to work with people."

"In the selection of employees, testing is used only to a limited extent. We must be careful not to screen out those persons who have not yet reached the median level of operation before they have had the opportunity to prove themselves."

"We receive this question from educators frequently, 'Are you going to be able to find a place for the individual who is a poor reader, possesses low ability, has a physical disability, and no understanding of the technological world?' The answer is probably not."

A representative of Western Electric in Oklahoma City, speaking on The Type of Orientation Business and Industry Provides for New Workers said: "Industry must have people who are mobile, these people are out of necessity moving from pure mechanical systems to electronic systems or the combination of both. Our company trains as many people who can possibly qualify, unfortunately, not many can qualify because of a lack of background in math, physics, and English. All of the history that is taught to the high school student does not fit into the manufacturing process. Is our public school educational system ready to break away from its 19th century?" (I must make an aside comment that these high school students also need a competency in citizenship -- and history is important, as is English, and other academic subjects taught at elementary and secondary levels. Discretion dictates that we do not get too carried away with the swinging pendulum.)

He continues with: "Suggestions for improving the present educational system in order to prepare students for entry into the world:

1. Prepare the children so that they can at least read a newspaper and organize sequences of numbers.
2. Develop the attitudes of the children as a healthy relation to work (sic) People who don't want to work, won't show up for work, won't notify employers, do not possess a sense of responsibility.
3. Schools must stop promoting 'the individual' and promote group activities. In business and industry one must work for the good of the group and not the individual.
4. Information received on personal recommendations are most unreliable. Recommendations from professional people tend to be the most unrealistic of all. Students have a very difficult time in applying for a job. They don't know how. No one has ever bothered to inform the student of where and how to look for a job and how to apply for a job. The majority of the educators consider that all the graduating seniors will enter college, therefore, their prime concern is how to select a college." (This is a reaffirmation of an earlier quote by Advisory Council members).

The Dean of general education in a technical school where human relations is required of all students makes the observation that few people are fired because they do not possess the necessary job skill, but loose their jobs because they cannot work with people.

Regarding Work and the Individual, a University of Missouri professor says: "People are victims of occupational illiteracy -- they do not know what opportunities are available today. Schools do not become involved in occupational education because teachers feel they don't have time -

they do not want to take time away from their specialized areas of study. Many school people do not see the value of the program . . . and regard it as a one shot program -- Career Day. Occupational educational programs must start in elementary school with attitudes and values. The student needs to continuously and systematically explore his attitudes, values, and skills in regard to what is available."

Dr. Maurice Roney, Director, The School of Adult Education, Oklahoma State University, comments on Preparing Technical School Graduates to Take Their Place in the World of Work: "A new approach to technical education is being operated as a pilot program at Oklahoma State University. The name of the program is Electro-Mechanical Technology. This program has a great deal of research behind it in terms of the number of technicians of this type which are needed at this time. Our complex technological society is functioning under systems which are controlled by a maze of combined electrical and mechanical systems in conjunction with each other. The need for electro-mechanical technicians exceeds the demand for both the electronics and the mechanical technician by a rate of 10-1 in 1975. The basis of the curriculum structure is to relate to common principles of electronics and mechanics through the common areas of physics and mathematics. The research thus far on the program reveals that through this approach the electro-mechanical student has a better comprehension of higher level mathematics and physics at the end of his freshman year than does the sophomore engineering student who has been taught each of these areas as separate courses."

"One of the amazing approaches to the structure of this program is the technical report writing which has been incorporated to relate directly to the area of study. The students are allowed to take technical report writing instead of freshman composition. Each paper is graded by two instructors, one from the technical institute who is concerned only with the technical data and one instructor who is a member of the English faculty, whose only concern is for correctness in form, style, and usage. The success of this approach is unreal. One would have to see a report written by one of these students to fully realize the success that has been achieved by changing from teaching a subject as a separate area and relating it to an area of specialization."

If we have noted a repetitiveness in comments by leaders in the educational and industrial fields -- we also are aware of shared goals and concerns.

We are not modern Carie Nation's -- but let us not overlook the power of women at work. According to national figures from the U.S. Department of Labor -- the number of women in the labor force more than doubled in the 35-44 age group; more than tripled in the 45-54 age group; and more than quadrupled in the 55-64 age group during the twenty-seven years preceeding 1967. Women represent 37% of the labor force; three of four work full-time, year round; the median age is 40. In 1968 the largest major occupational group of employed women was clerical workers -- nearly 9 million; service workers (excluding private household) and operatives claimed over 8 million -- another 4 million were professional and technical workers. In contrast, only 311,000 were craftsmen and foremen and 116,000 were nonfarm laborers.

It is estimated that by 1980, women workers will number nearly 36 million -- more than 1 of every 3 workers will be women. This is an increase of 26% for women employees as compared with a 22% rise for men.

It has been said,"Never underestimate the power of women". They represent a viable labor force. Through their organized groups of professional clubs, federated clubs, PTA, and similar organizations -- they are a formidable force in support of developing programs and idealogies. As we reassess our goals and innovate new programs, we could do worse than "Tell it to a woman".

Though the responsibilities of advisory councils are statewide, they share in local and national concerns. They represent a valuable resource for state departments of vocational education.

COST-EFFECTIVENESS ANALYSIS AS A METHOD FOR THE EVALUATION OF VOCATIONAL AND TECHNICAL EDUCATION

by

Jacob J. Kaufman*

It is the purpose of this paper to discuss cost-benefit analysis in terms of (1) its logic and meaning; (2) some of the misconceptions which prevail concerning this method of evaluation; (3) some of the problems and limitations of this method; and (4) the conclusions of a study, conducted by the Institute for Research on Human Resources at The Pennsylvania State University, which attempted to determine whether or not there is pay-off from an investment in vocational and technical education.

Logic and Meaning of Cost-Benefit Analysis

Under a free enterprise economy most private wants are satisfied through the workings of the market mechanism. Under this system it is assumed that, as a result of consumer choice, goods and services will be produced to satisfy these private wants and that the limited resources of the economy will be allocated through the operation of the market in a manner which will yield the greatest output with a minimum use of resources.

There are, on the other hand, certain needs and wants which cannot, (or society prefers not to) be satisfied by the private sector. Certain wants, described as social wants, are those which "must be satisfied by services that must be consumed in equal amounts by all." These services are such that some people can benefit from them even if they do not pay for them. And there is no reason to think that such persons would make voluntary payments. Governmental expenditures of this type might include expenditures for flood control, defense, sanitation, etc.

Another group of wants which could be provided by the private sector but, for a variety of reasons, are handled by the public sector because society considers them meritorious, may be referred to as "merit" wants. Included in this category are such items as low-cost housing and "free" education. In these instances the wants could be satisfied by the private sector but society apparently thinks that there are certain social benefits which flow from these activities and therefore society should assume the responsibility to satisfy these wants.

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It is not the purpose of this paper to discuss the pro's and con's of whether the government should concern itself with these "merit" wants. But it is the purpose of this paper to concern itself with the method by which it can be determined whether the provision of certain social and merit wants by the government are carried on efficiently, consistent with the objectives for which it has assumed the responsibility. And by efficiency is meant the attainment of an objective at the lowest possible cost.

In the private sector of the economy the market place, in general, is the place where these evaluations take place. The inefficient firm may have to go out of business. The firm that does not produce goods and services which satisfy the needs of the consumers may not survive. But what tests for efficiency and survival do we have when the government provides the goods and services?

The only alternative to the market place for the purpose of testing the efficiency of production or the quality of the product is by cost-benefit or cost-effectiveness analysis. Such an analysis is nothing more than an attempt to establish the equivalent of a system of market principles for various types of government activities. It might be reasonable to assert that the method of analysis is crude and that adequate data are not available. Such charges, however, do not negate the necessity to develop appropriate tools and to obtain data to judge a particular government activity.

The fact is that there is a tendency on the part of some educators to talk simply in terms of the "needs" of education. Their position is simple: the governmental agency should raise whatever funds are necessary to meet these "needs". On the other hand, there are some politicians who assert that there is a fixed sum of money available for educators to spend on education. The fact is that one should not talk about education in terms of cost or needs alone. No cost can be justified without a reference to payoff. And the satisfaction of any need cannot be justified without reference to cost. (Hitch and McKean 1965)

This means that one cannot discuss the need for or the payoff from vocational education without relating them to costs. Nor can one talk about the costs of vocational education without relating them to payoffs. If private vocational schools survive it is reasonable to assume that these schools operate at a profit and that the private sector of the economy is willing to pay the price of tuition. It is not unreasonable to assume, further, that the buyers of the education find that it pays off. We can also assume that the profit motive will be a sufficient stimulant to the owner of the private vocational school to keep costs as low as possible.

But what controls do we have over the public education? What incentives are there for the public educator to keep his costs down? What evidence is there that public education is being provided efficiently? What evidence is there that the objectives are being achieved?

It is being suggested that these are legitimate questions to ask during a period in our society when there are many demands for the provision of social and merit goods by the government. And, even within education, there are many demands for different forms of education. This means that decisions must be made as to the allocation of resources among competing educational programs. The only appropriate method for making these decisions is on the basis of a cost-benefit analysis.

One aspect of cost-benefit analysis which should be stressed is that it is basically a "way of thinking". It tends, first, to force an administrator to think through his objectives. This does not mean that the objectives are easy to state. Too frequently they are expressed too broadly and do not reflect the "real" objectives. It is not enough, for example, to state that the schools educate for the so-called "whole man". We must be more specific. Nor can it be stated that, for example, vocational education is designed to place a youngster in a job. Is it a job related to his training? Is it a job solely in terms of an initial placement or are we concerned with the duration of the job? Is it simply the first job or a series of jobs? Is it a job that leads to promotion? Is it a job that is satisfying to the graduate?

Second, cost-benefit analysis, as a "way of thinking", tends to force an administrator to concentrate on costs as well as objectives. The point need not be repeated that inputs and outputs are interrelated.

Third, cost-benefit analysis, as a "way of thinking", forces an administrator to think in terms of "alternatives", that is, to think in terms of alternative ways of achieving the same objective. To refer to the satisfying of wants in the private sector again, it should be noted that the pressures of competition tend to force private enterprise to seek other and better means of producing a good or a service. Similarly, the concentration on alternatives forces the educational administrator to seek other and better means for the education of youth. In this way we can get change and innovation in education. In fact, it is the failure to evaluate educational curricula that leads to stagnation. It is only through constant evaluation that we can obtain innovation.

The above comments are designed to indicate in a constructive manner the logic and meaning of cost-benefit analysis. Despite what appears to be a rather logical case for this type of analysis there is still considerable opposition to the technique. Such opposition reflects, first, certain misconceptions about the method. Second, educators have a different (and erroneous) view of evaluation. And, finally, educators view evaluation as a threat to their institutuions. Each of these points will be discussed briefly.

Misconceptions of Cost-Benefit Analysis

One of the most serious misconceptions about cost-benefit analysis is that it is merely a subterfuge for seeking to conduct education on a "least-cost" basis. This is a complete misunderstanding of the notion of efficiency. To an economist efficiency means the achievement of a given objective with a given cost. Efficiency combines both input and output.

A second misconception is that benefit is measured only in dollar terms, and that this is a form of crass materialism. Cost-benefit analysis recognizes that there are non-economic benefits which should be taken into account. Such non-economic benefits may include voting behaviro, job satisfaction, cultural values, etc. However, it is essential these objectives should be established on the basis of decisions of the community to determine whether it wants to spend its funds (and how much) for the explicitly stated objectives, economic or non-economic.

A third criticism usually advanced against cost-benefit analysis is that there are some things that are not quantifiable. Presumably, this means that there is no way in which one can determine whether or not a given objective has been attained. If this is so, what justification exists to continue expenditures for objectives which cannot be quantified? Why the assumption that non-quantifiable objectives are automatically good? Although certain objectives may be difficult to quantify, every effort should be made to develop "inferential" (or proxy) indexes. For example, the extent of "interest" of students in a curriculum might be inferred from an index of absenteeism. Psychologists can be of great assistance not only in the development of such indexes, but also in the creation of the necessary instruments designed to compute them.

A fourth criticism frequently mentioned is that the cost-benefit technique has not been fully developed and, therefore, should not be applied. The first part of the statement is correct, but the conclusion does not follow. The fact is that once a decision is made to spend more on, say, vocational education, an implicit decision has been made that the benefits exceed the costs. Therefore, the issue is not whether cost-benefit analysis should be applied to vocational education. It is being done every day when an educational administrator decides to spend a dollar on vocational education rather than on another type of education. The only question is whether the vocational education administrator should be required to state explicitly the manner in which he arrived at the decision. When the process of decision-making is made explicit then others have an opportunity to judge the correctness of the process. It is only in this way that better decisions can be made on the allocation of limited resources for educational objectives. The rejection of an explicit cost-benefit analysis simply means a refusal to expose oneself to an evaluation of a decision-making process. In a democratic society this is unacceptable. In a democratic society the notion that the expert knows best is not tenable.

Fifth, there is a misconception that the cost-benefit analyst substitutes his judgment for that of the decision-maker. The analyst may ask the administrator some pertinent (possibly impertinent) questions. In no instance, however, does he substitute his values for those of the administrator. The analyst simply provides information--cost and benefits--of alternative lines of action designed to achieve the objectives as outlined by the administrator. The analyst simply assists the educational administrator in meeting the objectives of the community in the most efficient manner.

Finally, it is sometimes argued that cost-benefit analysis tends to ignore political considerations. Although the analyst ignores the political aspects of a program it does not necessarily follow that the decision maker should ignore "politics". This type of analysis will, however, tend to reveal the cost of a political decision and may well tend to minimize the role of politics in the decision-making process.

The Meaning of Evaluation

The literature on the subject of evaluation is overwhelming. And it is not the purpose here to review this literature. However, the term "evaluation" appears to have several commonly accepted meanings. One must make it clear from the outset in what sense the term is employed in order to avoid misunderstanding. In terms of definition, evaluation must be separated from closely related concepts with which it is often confused.

A major distinction must be made between evaluation of individuals and evaluation of processes. Most educators still tend to think of evaltion only in terms of testing, or in terms of discriminating among individual students for administrative or instructional purposes. Indeed, most of the professional literature concerning evaluation uses this concept as its focal point. This probably reflects the fact that most publications in the area have been done by educational psychologists, who are mainly concerned with problems of testing. Another type of evaluation is on an evaluation of the educational process as it is carried out within certain institutions (i.e., within certain schools or school systems). The goal is not the assessment of the individuals but rather the assessment of the progress of all students within a program and the determination of reasons for the relative success of various aspects of this program.

The definitional problem centers around a distinction between measurement and evaluation. To a large extent these two terms are used as equivalents by educators. But the distinction between the two is important. Measurement implies only quantity, while evaluation implies quantity plus quality. Measurement is a necessary part of evaluation, but evaluation requires both pre-measurement and post-measurement considerations. Before measurement commences, evaluation requires the formulation of a basic educational philosophy (and its attendant goals) and the statement of specific behavioral objectives to be measured. After measurement is completed, evaluation requires (1) the analysis of measured quantities in terms of the attainment of objectives and progress toward goals, (2) an estimate of the value of existing programs in determining this progress and (3) an estimate of the costs involved in the conducting of these programs.

Resistance to Evaluation

We live in a world of rapid change. Within the past half-century, the pace of technological and social change has increased tremendously. In the face of this, the educational establishment still tends to change.

This resistance is perhaps best exemplified by the rates of development and acceptance of evaluation tehcniques. The first large scale attempt at evaluation was the National Study's development of the Evaluative Criteria, (1960), about thirty years ago. Since then, the criteria have been updated somewhat, but still are largely in their original format. Few other substantial techniques have been devised, and those which are available are utilized mainly for special research projects rather than for ongoing evaluations by interested school districts.

Apparently one of the major obstacles to evaluation research is the interest in the maintenance of a program held by its administrators. Many school administrators seem to view evaluation as an attack upon their institutions, and they erect a shield of defensive attitudes against such an event. This circumstance arises as a result of a failure to separate conceptually the particular educational institution from the process of education which goes on within it. These are two quite different entities, yet both administrators and evaluators too often neglect to view the situation in this manner.

The purpose of evaluation is to point out the strengths and weaknesses of a process, not to police the institutions in which the process occurs. But much of the evaluative effort appears to be just such a policing action. It has been shown that evaluators have been trying to get along with data of an administrative type (such as average class size, average teacher salary, etc.) rather than data of a process type. From these considerations, there would seem to be two paths to greater acceptance of evaluation. One of these is to assure the school administrator that the evaluation is to be used to study the process of education within his school and to help him improve this process, and that it is not to be used for the purpose of making value judgments about his school. The other path to acceptance lies in following up this assurance by utilizing evaluation procedures which really are aimed at collecting only these data relevant to the educational process. In doing so, the evaluator may have to give up some data he would like to have but the increased acceptance and cooperation should more than make up for this. Much of the data which are presently collected under the guise of evaluation is mainly used to sustain the existing state and national educational bureaucracies; their educational relevance may be quite low.

Furthermore, even when the process is being evaluated, little or no consideration is given to costs, a necessary ingredient in any evaluation process.

The remainder of this paper will summarize a recent study of cost-effectiveness of vocational education. (Kaufman et al, 1968)

Objectives of Cost-Effectiveness Study

This study of the cost-effectiveness of vocational education had two fundamental objectives. First, it was designed to develop an appropriate methodology for the conduct of such a study. Second, it was designed to obtain data in order to demonstrate the extent to which a study can actually be carried on, and to indicate the magnitude and direction of results. In this paper the former will be ignored and consideration will be given the second objective.

In order to determine the optimum allocation of public resources in education, in particular between vocational-technical education and alternative curricular for non-college attending students, measurement is needed of both costs and benefits. Costs by themselves can neither be taken as an indication of quality, nor can benefits be evaluated without taking account of costs. Thus, although costs and benefits are discussed separately, no conclusion as to the worth of the two curricula can be made until the relationship of costs with benefits is considered.

Cost data were obtained from senior high schools in two cities. The current cost of instructing an additional student, that is, the marginal cost, was shown to be greater in the vocational-technical senior high school curricula than the respective costs for the nonvocational-technical senior high school curricula. The difference was between 100 to 200 dollars. Thus, unless the benefit obtained from the vocational-technical senior high school curricula was much greater than from the nonvocational-technical senior high school curricula, it is possible that the nonvocational-technical senior high school curricula are more worthwhile, and should receive a greater allocation of funds. This will be examined later.

An analysis of cost data can also reveal the optimal scale of operation of a senior high school, that is, the level of output, in this case average daily attendance, at which average cost is a minimum. If the statistical results derived in this study are reliable, the optimal scale of size of a nonvocational-technical senior high school is about 3,000 students, although there is a considerable margin of error. No optimal scale of size could be determined for vocational-technical senior high schools because of the small number of observations in this study.

It is important to know the optimal scale of operation because in performing the cost-effectiveness study it is assumed that each school is operating at its most efficient point, and that costs can only be reduced by changing the allocation of funds between curricula, and not by changing the size of the school. Further studies may give greater justification to this assumption.

The benefit data were based on labor market histories reported by mail questionnaires from a sample of high school graduates. Earnings and employment were used as proximate measures of benefit because of the absence of a unique objective measure. After making allowances for variations in the socio-demographic characteristics of the sample, it was shown that nonvocational-technical graduates earned less than vocational-technical graduates during the first year after graduation. By the sixth year, however, the difference in earnings between curricula was slight. Over the long run, the graduate's performance in the labor market is highly related to his labor market experience and socio-demographic characteristics, rather than to the kind of training received in the relatively distant past.

Nevertheless over the six years, given that both sets of graduates have the same socio-demographic backgrounds, vocational-technical graduates earned $3,456 more than graduates of the non-vocational-technical curricula. Similarly over the six years, vocational-technical graduates were employed 4.3 months more than graduates of the nonvocational-technical curricula.

Thus, for the study sample, given that earnings and employment are appropriate indices of the benefit of education, vocational-technical graduates earned significantly more and were employed significantly longer than the graduates of the other curricula during the six-year post graduate period. The vocational-technical curricula, therefore, not only costs more in relation to the nonvocational-technical curricula, but also yields greater benefit. It is still not possible, however, to determine whether additional funds should be allocated to the vocational-technical curricula or to the nonvocational-technical curricula.

In order to analyze vocational-technical education as an investment in the human agent, the relationship between costs and benefits must be determined when taking account of time, depreciation, risk and uncertainty. Investment criteria are utilized for this purpose. There is no single one which is theoretically or practically correct for all investment situations. Each is limited by a different set of assumptions. In the study, therefore, several criteria were employed. Each of them, separetely, showed that additional public funds should be spent on vocational-technical senior high schools.

It is asserted by some that students who might normally have dropped out when following the nonvocational-technical program might become successful graduates within a vocational-technical program. In this study the comparison can only be made for students of any curriculum who graduate and those of the same curriculum who drop out. Employment and earnings benefits of the dropouts were measured from the time when they would have graduated.

Over the six-year period, vocational-technical dropouts were employed 11.6 months more than the nonvocational-technical dropouts. The difference in employment between nonvocational-technical graduates and dropouts is greater than the difference between vocational-technical graduates and dropouts. Thus, while nothing can be said about the dropout saving propensity of the vocational-technical curriculum one may be able to assert that dropouts from this curriculum fare better in the market place than dropouts from other curricula. However, this may be because vocational-technical students dropout in response to a perceived labor market opportunity, and not necessarily because of a fundamental inability to successfully complete high school.

Many consider that one of the major benefits of a vocational-technical school is the ability of these schools to recitfy short-run shortages in needed skills. A total of 129 employers were interviewed and their replies indicated that on-the-job training for employees from vocational-technical senior high schools was on the average 12 to 64 weeks shorter than for other employees. For the firms in the sample which had any type of training program, vocational-technical training not only shortened the training program, but also resulted in a higher wage rate while in training. In fact, during the training period it cost employees of vocational-technical graduates about $245 less to receive the necessary training.

Both of the above factors give further justification to the major conclusion of this study--that additional funds should be allocated to the vocational-technical curricula--by indicating further benefits accruing to the vocational-technical curriculum which had not previously been taken into account. A final potential source of bias in measuring benefits to vocational-technical education may lie in non-monetary and non-economic factors. These were also examined.

An improvement in citizenship and an increase in social participation were considered as possible non-economic benefits resulting from different educational curricula. Voting behavior, in the 1966 primary elections and in the 1964 Presidential election, was assumed to be a suitable measure. It was shown that if this assumption is justified, curriculum does not have any significant impact upon citizenship or social participation. Career satisfaction was also considered as a possible benefit. It was shown that vocational-technical graduates had .28 fewer jobs that did not fit in at all with their career interests than did non-vocational-technical graduates. Thus vocational-technical training has in part done what it set out to do--to prepare workers for employment in their areas of training.

The evidence, therefore, suggested that there was little difference in non-economic benefits between vocational-technical and other curricula. Thus, the economic benefits, as discussed earlier, may represent a fairly close estimate of total monetary and non-economic benefits. Again, it can be said that, for the study sample, vocational-technical education is an economically worthwhile investment for individuals and for society.

However, although this study has shown that vocational-technical education is economically worthwhile for this study sample, one cannot necessarily generalize on the basis of these results. If further studies corroborate these findings, then generalizations can be made on safer ground, but considerable refinement is still needed of both concepts and data.

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SUMMARY OF CONFERENCE

PROBLEMS, SOLUTIONS, AND IMPLICATIONS FOR ACTION

by

William G. Cummens *

I'd like to start my remarks by asking of you folks in the audience if you've ever experienced being asked to stand before a group and make a few remarks when the audience had their baggage packed in the back of the room? I suppose that the bus is parked in behind here somewhere with the motor running. It's Friday after a week of intensive work and you're suffering with -- what was it this morning -- the Gogetter's Blues, or something. Well, I'll assure you that I'm not going to take a lot of your time this afternoon. I think the conference has been well presented already. I do have just a few remarks and I'd like to extend greetings to all of you from the U.S. Office of Education.

You know that I'm in the Regional Office in Dallas assigned to Vocational-Technical Education. The first time I knew of this particular conference, I read it as you did in an announcement that said that there would be an evaluation conference, and that Dr. Norton would be in charge. I said, "Well, I'm quite pleased; this is going to be in Region VII, we think it's one of the most important conferences that will be forthcoming, and I'm particularly pleased that it's at the University of Arkansas." You see - we're kind of prejudiced down in this Region. We think Arkansas and our State are the best. We think Region VII is the best, and we think that you couldn't have chosen a more interesting, more comfortable, more beneficial place to hold such a conference. Now, that seemed rather far away at the time. I thought maybe I'd get to participate. I didn't dream that I'd be called into an assignment and have to come to this conference on a Thursday and be asked then to give a summary of the whole conference; which, I think all of you would agree, would be quite difficult. But I would wish to extend the regrets of Mike Russo and Edwin Crawford who could not attend, since they would do a much better job than I. They are most effective. I understand, Bob, why you invited them -- because I happen to know their background and I know the type of job that they can do and it is with sincere regret they asked me to say that they couldn't be here.

They too have a little evaluation conference going themselves. As you are acquainted, right now the U.S. Office of Education is lending every effort -- every person -- toward getting State Plans processed under extreme deadlines, funding, and what-have-you.

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I would like to recognize - and for you to recognize - a colleague of ours. He's been with us all week and maybe many of you have met him. Herb Martin is here. He too represents the U.S. Office of Education and is from Mike Russo's office.

Now, when I deliberated on what I might present to you this afternoon, the fact is, I did not think I could go much further than maybe one or two points with this audience on this late date. I'm still not sure, Bob, as to what time the bus leaves. I may wind up talking to myself because my plane leaves at seven. I attempted to review what might be presented this afternoon and I decided that it should not be on the mechanics, the elements, the design processes, figures, programs, and what-have-you of evaluation. What I did want to discuss with you, and -- to spend just a moment with you on -- is: USING EVALUATION TO TELL THE STORY OF VOCATIONAL EDUCATION -- To tell the story is a rather elementary sort of thing, but I think it has ramifications that are of deep concern to us.

You see, I started as a teacher and I was frustrated rather quickly in that assignment because I was asked to appear before an audience of teachers in my school's auditorium, and explain Vocational Education. Now if you want to get into something rather difficult, you just try that. I'm sure you've been asked to do the same thing. Possibly you can sympathize with that.

As I moved from a teacher to the State Department of Education as a State Supervisor, I was charged with some legislative hearings where, here again, I was asked to tell the story of vocational education. And I'm afraid -- I will have to admit to this audience -- that I probably failed again. You know, the story of vocational education is, I guess, the hardest story there is to tell - simply because we try to tell it all; we get exhuberant, we get excited, we get concerned. We don't stop to think that when we attempt to tell the story of vocational education we're also attempting to tell a story as big as the counterparts of all education. I mention counterpart - I think you'll agree with me that we do have counterparts in vocational education to every single factor involved with education itself.

We have beginners and advanced students. We have youth and adults. We have completers and dropouts. We have accelerated and remedial students. We have classrooms and laboratories and we have teacher certification requirements that are peculiar but yet they are requirements for teacher certification. So, you see, when we tell the story of vocational education, we tell a story that is as big as all education itself, and we do a pretty miserable job many times.

How does this relate to evaluation? What does evaluation have to do with telling the story? I think there's a very direct and close relationship between them. I don't know of a single teacher that isn't telling a story using collected information to students of his particular class or offering. I don't know of a State Education Agency that is not attempting to tell a story to the people of that state -

to the state legislatures regarding funds. I don't know of a national government that is not attempting to tell a story to those who will listen and will influence the course of action required in vocational education. Maybe it is such that we don't know the whole story. Maybe that's the reason we don't tell it. If we don't know the story, where are we going to get it? I think it's such things as you discussed this week that's going to give us the information that we need to tell the story. I think your evaluation instruments, your evaluation techniques, your programs, your follow-ups, are the elements that this country is concerned about hearing.

Now, let me give you an example. I was fortunate to appear and to be chosen to be a member of a task force appointed by President Johnson called the President's Committee on Manpower. It was quite fortunate at the time for me because I was asked to meet with officials in Washington and, in turn, move with this program to the state where we had a cross-section of all Federal agencies, all state agencies represented. The conference was chaired by Secretary Willard Wirtz and I heard various agencies called before groups such as this to explain in a short concise way what you're doing in your program. This was to familiarize us. I was quite positive at this time and hopeful because I was with the Regional Office - this was my first visit to Washington and I was looking quite closely to see the reaction of our own Department in relationship with others.

We were preceded on the program by, I believe it was, the Office of Economic Opportunity, and we had following a very formidable person representing the U.S. Office of Education with the explanation of WHAT ARE WE DOING IN VOCATIONAL EDUCATION. He made a very short presentation - saying "We're training 5,000,000 people in vocational education" -- but there was very little further information except the comment on numbers trained. Immediately following our Office of Education representative was a Vocational Rehabilitation representative. "What are you doing in Vocational Rehabilitation in these United States?" The first reply was this. He said, "We are training 1,000,000 - or something - people." Remember, we said 5,000,000 before - it was 1,000,000 for this agency. "We're training 1,000,000 people, BUT, every person that we train has done this, as far as success in their job - we have relieved the economy for this much welfare funds that would normally be spent," and he had facts and figures. He spoke intensively about WHAT HAPPENED TO PEOPLE IN THEIR PROGRAM. Well, you folks and I know what follows. That department and that agency of government receives quite a good deal more money for operating their program in these United States than we do to operate vocational education in total. We're dealing now with what? 7,000,000 people? - as opposed to much less in the other Division. I don't believe in selling our program on the strength of someone else's but it is a common fact that 40,000 Job Corp trainees receive more actual Federal training funds than we receive for vocational education. I'm one who is firmly convinced that the reason this is true is because we don't tell our story. We don't tell it right, we don't tell it completely as we should, we don't tell it in accordance with the needs and interests of people.

As you think about evaluation, and move with the development or the expansion of the evaluation program in your state, or in your agency or department, I would hope that you will think in terms of "What will this do to help us, help me, help the state, help this school tell the story for vocational education. I want to give you another prime example. It happened in our own office. Bill Sands is a program officer on our staff, and he came to my office the other day. He'd taken a survey of the actual cost of training under a licensed practical nurse program. He found that the practical nurse training program, under vocational education, cost somewhere in the average of $200 per student -- to train a licensed practical nurse. Bill was interested in Health Occupations and has a real fine background in Health Occupations; he was amazed that we could train for $200 per student; and, on the other side of the ledger here is this whole proliferation of agencies that are averaging somewhere around $1,000 - and maybe more - to train a licensed practical nurse. He said "I don't think that the proper people are hearing this story." I agreed.

He said, "Do you suppose that this information has filtered out yet?" I said, "I doubt it, Bill."

Well, he drafted a letter to the AMA Newsletter to call it to their attention. He thought that they might be interested in this cost effectiveness study. He sent this material to the Newsletter and it was published. And, I guess the AMA Newsletter reaches every doctor, every office in every city and state in this Nation. We, at least, heard from the effects of it. Texas has regional hospital administrators who are organized. We call them the Texas Hospital Association. They said," We weren't at all acquainted with this program. We didn't know it existed. We're pleased to know about it. We want to move with you people in developing other programs."

This thing has mushroomed ever since. We had the Public Health Service people come to us for the first time. They'd been on a project system, Fred, and you boys at the state level know what I'm talking about on projects. Some people think projects are the answer to all training, you know. Well, a project is a one-time effort. You get one thing accomplished and it dies. We don't do that in vocational education. We get multipliers going. We expand.

So, we had the Public Health Service come to us. "We want to join with you now." We explained how we worked in the state. I'm saying this because we think it was quite vital. Now, we don't think - and I don't think you people need this after a week of intensive activities in evaluation, that the evaluation process is a panacea. I've heard discussion in states, in many areas, where they thought that the evaluation instrument was going to do it all. "It's going to get rid of all our weak teachers." "It's going to insure top quality curriculum material." "It's going to influence the development of all programs in vocational education." I think evaluation - and I'm very sincere - I think it is the most effective tool that we have, and that's the reason why I'm so excited about this conference. I think without a doubt, Bob, I'll tell you this: that the subject of this conference, witnessed by the intense interest of this group here, tells us very strongly that this topic of EVALUATION really ranks at the top of the list of all the subjects that have anything to do with vocational education. But I still don't think it's a panacea. I've heard people say "Well, we can use evaluation to allocate vocational units within a state."

I think of evaluation as a process that many times follows the work of a State Plan. And I still think the basis for allocation of vocational teacher units will be your State Plan. I think evaluation, then, is a process for improvement, guidance, and what-have-you.

Back to our telling the story. We can't do it - we can't tell the story of vocational education completely. What are we going to do? We're going to tell it in parts. We'd like to tell the story of vocational education all at one time and be through with it. We'd like to be able to go before city organizations, legislatures and, all in one load, unload the whole shootin' match and say "This is the story of education in vocational education, now, fund us for the next 25 years." Well, now, frankly speaking, we almost accomplished that since 1917. That's what? - how many years?

Fifty-two years - almost on faith alone. We haven't had to concern ourselves and document much of evidence to Congress on what we were doing. We did play the numbers game all these years but we didn't tell them much beyond numbers. Then the 1963 Act came along. Congress gave us an additional charge and responsibility. I'm not one who says that everything's wrong. I'm not one who says that vocational education dropped the ball completely, as many people would have you believe on the 1963 Act. I think we did a great deal. I think we've left a great deal to be done on the '63 Act. But I think now Congress is telling us a great deal more in 1968. "You made an account of yourselves, you had some success; now, in 1968, we're going to give you another opportunity." And we are in that area of social educational revolution. I don't believe - and I've witnessed this very closely - I don't believe there is yet a single State Department of Education that has not taken close account of this new Act and has started to move with it expeditiously. I think they all have and I think they are to be congratulated.

Back to our storytelling. Unless we tell it like it is, someone else will tell it like it isn't. To think in terms of evaluation again, your instrument - following the determination of its ability, should call attention to facts and material people want and need to know. As someone said, our mission is very simple. We take people who are not job ready and make them job ready and then finally see they're placed in meaningful and rewarding work. That mission is pretty well simply put, but it's a pretty big mission. And we think all along the way that evaluation plays a most important role in every single faction of the mission itself.

I'd like to inject one more thought before I finalize, and that's this. Let's not make our evaluation become a witch hunt. There are certain agencies "waiting in the wings" we call it, that would like to make evaluation in education - particularly in vocational education - become a witch hunt. I think in education, whether it's vocational education or not, I think you can find anything you're looking for. And I'm one of them that I hope is not blind to the bias.

Hopefully, as we go back to our respective states, we will pause and direct our attention to the good that we've done and not let this be a witch hunt for the forces that are waiting in the wings to take over vocational education if they can. And there's quite a number. Thank you.

APPENDIX G

TASK GROUP REPORTS

REPORT OF GROUP A-1
ON
STATE DIRECTED EVALUATION OF STATEWIDE PROGRAMS

The participants carefully reviewed, discussed and synthesized the presented papers, reference materials and individual input in light of the major purposes of this institute. The result of this effort is a tentative consensus by the participants regarding the following areas of concern:

I. Role of evaluation in sound educational decision-making;

II. Scope and objectives of vocational education and their relationship to evaluation;

III. Basic data requirements for effective evaluation (conducted by a minimum of two major organizations such as -- (1) educational organizations and (2) advisory councils);

IV. Appropriate techniques for obtaining the necessary data including:
   A. Types of data instruments needed,
   B. Criteria for instrument selection,
   C. Procedures for instrument development;

V. Procedures for organizing, interpreting, and disseminating evaluative information;

VI. Administrative procedures effective in developing and implementing a viable evaluation program.

I and II. Role, Scope and Objectives

There are several cogent reasons for objectively evaluating statewide programs of vocational education. First, continuation, expansion and improvement of vocational education programs must be justified by decision makers on the basis of objective data. Second, evaluation processes can provide decision makers with a means of determining vocational program efficiency, effectiveness, and utility. Third, evaluation provides a starting point for the design of an improved program of vocational education.

Evaluation is a process of determining, at any given moment, where vocational education is, providing base-line data for measuring progress. Evaluation is never perfect. However, it seeks to eliminate, or at least reduce, the wide range of human error that is inevitable in the application of subjective opinion.

Decision makers are concerned with the extent to which stated goals and objectives are congruent with actual outcomes. The prime purpose of an evaluation program should be to provide data needed in determining the extent to which the objectives and outcomes are in accord. In summary, the role of evaluation in the decision-making process is to design, direct, analyze, and report the necessary data on which decisions may be made. Thus, evaluation is not merely essential, but mandatory for the future growth of vocational education.

III and IV. Basic Data Requirements/Obtaining Data

It has been established that statewide evaluations of vocational education programs must occur. All state agencies and local school districts will need to evaluate themselves and arrange for objective evaluation.

Whether by statute, mandate, or executive order other agencies may be asked to conduct evaluations on the performance of the state agency. For example, the state advisory councils are so charged in the Vocational Education Act of 1968.

In order to accomplish the task of evaluation it will be necessary to obtain, analyze, and present data. Suggested types of basic data requirements and techniques for obtaining the data are as follows:

Topic III - Basic Data Requirements

A. Vocational Education Programs*
   1. Secondary
   2. Post-Secondary
   3. Adult
   4. Disadvantaged
   5. Handicapped

B. Services and Activities
   1. Teacher Training/Education (reimbursed and non-reimbursed)
   2. Supervisory/Leadership
   3. Curriculum Development
   4. Program Development
   5. Vocational Research

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*A program would include, but not be limited to, the following elements:
1. Statement of Need
2. Objectives
3. Students
   - Qualifications
   - Selection
   - Source
4. Instruction
   - Teachers
   - Training Methods
   - Training Materials
5. Facilities
6. Schedules
7. Certification
8. Reporting Instructions

    6. Guidance/Counseling
    7. Certification
    8. In-Service Training

C. Funds Allocation
    1. Administration
    2. Ancillary Service
    3. Program
    4. Matching Funds
    5. Exemplary Program
    6. Research
    7. Construction
    8. Private Vocational Training Institutions

D. Facilities
    1. Buildings
    2. Equipment
    3. Training Aids/Materials

E. Product (Trainee/Student)
    1. Labor Market Information
        a. Manpower Needs
        b. Job Opportunities
    2. Job Upgrading
    3. School Population Information (potential students)

F. Faculty and Staff

G. Organizational Relationship

H. Values/Concepts
    1. Work
    2. Moral
    3. Ethical
    4. Patriotic

Topic IV - Obtaining Data

A. Types of Instruments and Sources of Data
    1. Sources and Response Documents
        a. Cards
        b. Forms
        c. Mail Responses
    2. Observation
    3. Interview
        a. Students
        b. Employers
        c. Teachers
        d. Lay Public
        e. Associations
            (a) Labor
            (b) Professional
            (c) Employer

    4. Public Hearings
    5. Review/Investigate/Inspect
        a. Public Records
            Communications Files
        b. Research Reports
            Follow-up Studies
    6. Other Agency Information
        a. Tax Bureau
        b. Census Bureau
        c. Credit Bureau
        d. Employment Service
        e. Employers

B. Procedures for Instrument Development
    1. In-house Development
    2. Resource Personnel - Consultants
        a. Educational
        b. Business
        c. Advisory Committees
        d. Lay Persons/Groups
        e. Associations
            (1) Labor
            (2) Professional
            (3) Employer
    3. Guidelines
        a. National
        b. State
        c. Legislative
    4. Interstate Exchange

C. Criteria for Instrument Selection
    1. Purpose/Objectives
        a. Improved Program Planning
        b. National and State Guidelines
    2. Time
    3. Resources
        a. Finances
        b. Personnel
            (1) Competence
            (2) Availability
    4. Emphasis/Level
        a. National
        b. State
    5. Capability to Handle Data Information
    6. Target Group
        a. Size
        b. Nature
    7. Technological Trends
    8. Economic Conditions/Trends

V. Organizing, Interpreting and Disseminating Data

In order that state procedures for organization, interpretation and dissemination be established and instituted, certain basic requirements are necessary. The following suggestions are offered:

A. Organizing Evaluative Data
  1. Adequate Qualified Personnel
    a. Supervisory Personnel (with responsibility and authority)
    b. Personnel (with specific competencies)
      (1) Computer Training
      (2) Statistical Training
  2. Adequate Funds
  3. Adequate Time
  4. Advisory Committees
    a. State Advisory Committee
    b. State Vocational Personnel
    c. Administrators of Vocational Schools and Schools with Vocational Programs
    d. Teachers of Vocational Courses
    e. Teacher Trainers
    f. People of Business and Industry
  5. Establish Evaluative Approaches which provide:
    a. Flexibility
    b. Program Continuity
    c. Prescribed or Assigned Time Schedule (PERT)
    d. Data Processing Competency
    e. Adequate Finances
  6. Specific Objectives
  7. Measurable Outcomes
  8. Evaluative Devices. Such devices should stop short of decision-making but provide data to decision makers for this process.

B. Interpreting Evaluation Data
  1. Compiling (both subjective and objective data)
  2. Analysis of Evaluation (must be tempered by knowledge of modifying local conditions)
  3. Summarizing (3 to 5 pages)
  4. Synthesize Results (The persons or agencies charged with the major evaluative function must synthesize results but leave decision-making to the official decision makers.)
  5. Writing Reports (brief and understandable)

C. Disseminating Evaluation Data to the Following Audiences:
  1. State Directors, State Superintendent of Schools, State Boards of Education, and Legislators
  2. State Advisory Council
  3. Local Schools
    a. Administrators
    b. Vocational Teachers
    c. Guidance Counselors
    d. Advisory Committees
    e. School Boards

4. Teacher Training Institutions
5. Other State Vocational Education Personnel
6. Public (selected data for local newspapers, TV, radio and other media)
7. Others (selected non-vocational audiences)

VI. Administrative Procedures

Each agency or organization will need to develop an administrative pattern of operation based on local variables. However, several suggested procedures are as follows:

A. State board policies must be established to provide a framework for action. These should include:
   1. A long-range commitment;
   2. The overall objectives of the evaluation(s);
   3. Definite authority and responsibility assignments;
   4. Establishment of parameters of the proposed evaluation (e.g., reimbursed vs. non-reimbursed, level of programs, product vs. process or combination);
   5. Reassignment of financial resources if necessary.

B. Administration must expect and receive periodic reports on the progress of evaluation efforts.

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REPORT OF GROUP A-2
ON
STATE DIRECTED EVALUATION OF STATEWIDE PROGRAMS

The area of major concern to evaluation examined by Group A-2 was "State Directed Evaluation of Statewide Programs." Representatives in the group included persons from three state advisory councils, eight state departments and one state university. This report is separated into four distinct sections:

I. Report on discussion relating to items identified in the small task group assignment;

II. A listing of questions pertaining to the presentations of Mr. Mullen, Dr. Starr, Dr. Moss and Dr. Byram;

III. Responsibility of persons at the state level charged with evaluation;

IV. Implementing evaluation as an integral part of vocational education.

I. Report on Discussion Relating to Items Identified in the Small Task Group Assignment

The purpose of evaluation is to provide objective data which will enable program leaders to make appropriate administrative decisions. Sound decision-making practice recognizes continuous evaluation as imperative and crucial to the process. It is felt, therefore, that state agencies must improve their quantitative and qualitative performance in evaluative endeavors. Moreover, data gleanings from future vocational evaluative activities should be expected to provide evidence relative to the efficiency and effectiveness of programs in light of personal as well as societal payoff.

More appropriate evaluation might suggest that evidence concerning the effectiveness of a vocational program should be couched in terms of the investment made to support the program in question.

It is recommended that future state evaluation activities strive for the restatement of objectives in operational and measurable terms. Historically, we find that program objectives are globally stated yet, in program evaluations we traditionally seek specific bits of information since analytic feedback is desired and necessary for enlightened decision-making.

Evaluators are urged to avoid constraining the logistics and effectiveness of evaluation efforts by attempting to evaluate nebulous, loosely stated, and individually interpretable objectives.

Basic Data Requirements for Evaluation

A. Human Resources Data
   1. Who the people are and where they are
   2. Assessment of interests, aptitudes, and abilities
   3. Employment status
   4. Identification of handicapped

B. Manpower Requirements
   1. Kinds and locations of job opportunities
   2. Knowledges, abilities, and skills required in relatively static occupations
   3. Knowledges, abilities, and skills required for emerging occupations

C. Social and Economic Conditions
   1. Identification of disadvantaged individuals
   2. Location of depressed areas
   3. Income of individuals having received vocational training as compared to similar groups who had no vocational training
   4. Job satisfaction comparison between vocational program completions and others

D. Program Evaluation Data
   1. Teacher qualification
   2. Adequacy of physical facilities and equipment
   3. Adequacy of curriculum
      a. Clear statement of measurable objectives
      b. Course of study
      c. Instructional materials

II. A Listing of Questions Pertaining to the Presentations of Mr. Mullen, Dr. Starr, Dr. Moss and Dr. Byram

A. What roles do you expect the RCU to play in future evaluative endeavors?

B. Don't we need specific conferences dealing with specific evaluation styles?
   1. Evaluation of the product
   2. Follow-up evaluation
   3. Evaluation of the curriculum, etc.

C. What do teacher training institutions plan to do about preparing a new breed of vocational educators in the area of evaluation?

D. Can we realistically expect traditional educators to become competent in evaluation without strong and repeated in-service training?

III. Responsibility of Persons at the State Level Charged with Evaluation

The major responsibility of persons at the state level charged with "evaluation" will lie in two major areas.

A. Review and approval of local plans or applications

B. Evaluation of programs in light of objectives set forth in local plan

State staff charged with such responsibility need immediate, practical information on what factors to look for that seem to insure success in vocational programs. Group A-2 suggests that the following factors may be of assistance to those persons who return to home states charged with the two-fold responsibility of evaluating both local plans and local programs.

Approval of Local Application

Evaluation of local plans is the immediate problem facing state staff. Group A-2 believes there are certain factors that must be included in these plans in order to insure some type of success, and suggests the following factors:

A. Objectives stated in terms that are measurable

B. Sufficient manpower data to accurately reflect the employment needs and job opportunities

C. Assurance that vocational education needs of the community are served in terms of disadvantaged, handicapped and the school dropout

D. Local maintenance of effort is such that quality of program standard is achieved

E. Community involvement and local planning are used to give direction and guidance for vocational training and to utilize all available resources

Evaluation of Programs

Each of the fifty states will have state staff personnel charged with the responsibility of evaluation of local programs. This implied that the evaluative process will be concerned with "Have the objectives in the local plan been implemented successfully?" This is not to imply the state staff will conduct all evaluation, merely responsibility for such evaluation. A broad mixture of self-evaluation, team evaluation representing labor, industry, business, higher education, community, and utilization of other accreditation or evaluative agencies is necessary. The method of collecting data, treatment of data and other philosophical items are means to achieve this end. Evaluation should be defined as much more than collection of data. In most cases, other state staff personnel should be charged with collection and compilation of appropriate data.

There are several factors that seem to insure success in vocational programs. Group A-2 suggests that the evaluator should be concerned with the following factors--this list is not exhaustive, but may serve as a conjunctive guide in the development of state directed evaluation of programs:

A. Comparative Analysis

B. Data on Manpower Needs (local-state-National)

C. Training Output

D. Mobility of Graduates

E. Individual Needs

F. Non-duplication of Services

G. Other Sector Output

H. Needs of Disadvantaged and Handicapped

I. Cost-effectiveness Analysis

J. Career Education Articulation (vertical and horizontal)

K. Work-experience Programs

L. Facilities Utilization

M. Administration and Organization

N. Teacher Utilization

O. Program Retention and Attrition

P. Community Involvement

Q. Ancillary Services

R. Effective Placement Services

S. Inter-agency Cooperation

T. Recruitment-Selection

U. Promotional Activities and Public Relations

V. Innovative Programs and Research

W. Curriculum

X. Accessibility

Y. Placement Data Including Earnings

Z. Upward Mobility of Graduates

Each element can be further broken down into measurable objectives.

IV. Implementing Evaluation as an Integral Part of Vocational Education

Vocational-technical education evaluation contributes to human and public relations, civic involvement and responsibility, and assessment and development of new approaches and additional alternatives when organizing, interpreting, and disseminating evaluative information are accomplished with efficiency, effectiveness, and relevance to its objectives.

Evaluative information reflects the degree to which vocational-technical education programs have prepared students for job satisfaction, successful production, multi-vocational skills, and citizenship involvement.

The evaluation effort should not be fragmented and limited to organizing, interpreting, and disseminating information but should be used to generate and create alternatives for identifying student and manpower needs.

Evaluative Information:

A. Student Achievement and Services
    1. Recruitment and Selection
    2. Guidance and Counseling and Testing
    3. Placement
    4. Extra-curricular Activities

B. Curriculum
    1. Objectives of Program
    2. Needs of Student
    3. Instructional Personnel
    4. Compliance to Federal-state Guidelines

C. Instructional Personnel
    1. Qualifications
    2. Instruction
    3. Student/Work Load
    4. Professional Activities

D. Supervision and Administration
    1. Fiscal Accounting
    2. Public Relations

E. Physical Facilities
    1. Equipment

    2. Adequacy
    3. Accessibility

F. Media Center-Library-Resource Center
    1. Programmed Materials
    2. Books
    3. Materials, Supplies
    4. Equipment (small)
    5. Adequate and Available to Students

G. Program Advisory Committee
    1. General
    2. Occupational

H. Planning (five-year projection for future program development by community, industry, state, and school staff)

The approach suggested here is expected to encompass not only the traditional or present need situation, but also point out the innovative or future need situation to result in more effective program planning at the local level.

It is further expected that organizing, interpreting and disseminating evaluation information would improve public relations, community involvement and advisory committee functions. The concept of a "total evaluation" of vocational education in local school districts can do much to resolve common problems facing manpower agencies and vocational education.

Organizing, Interpreting and Disseminating Evaluative Information

A. Organization
    1. Schedule
        a. Post high school - 1st, 3rd, 5th years
        b. High school - 2nd, 4th years--self evaluation
    2. State Staff, Director Vocational-Technical Education
        a. Determines dates for evaluation
        b. Advises school administration on procedure
        c. Recommends to school administrator names of experts in field to evaluate that class
            1. Local community expert
            2. Industry expert
            3. School system staff
        d. Provides evaluation instrument
        e. Orients evaluators in use of instrument
        f. Monitors evaluation
        g. Prepares summaries of evaluated classes and schools
        h. Prepares a state report
        i. Initiates all acknowledgements
    3. School Administrator
        a. Invites evaluators
        b. Furnishes evaluators data
            (1) School philosophy and objectives

        - (2) Class goals and objectives
        - (3) Class curriculum and schedule
        - (4) Class lesson plans for the day
        - (5) Inventory of supplies and equipment for class
        - (6) Information on the instructor
    - c. Hosts the evaluators at lunch
    - d. Cooperates fully with the evaluators in matters pertaining to areas being evaluated

B. Interpretation
- 1. Evaluators
    - a. Judgment pertinent to evaluation instrument
    - b. Narrative on strengths and weaknesses
- 2. Director Vocational-Technical Education
    - a. Writes synthesis by class and school
    - b. Prepares a state evaluation report
    - c. Recommends programs for planning and budgeting purposes

C. Dissemination
- 1. Director of Vocational-Technical Education
    - a. Shares report with superintendent, evaluators, administrators, and state staff
    - b. Share reports with the public through publications--magazines, newspapers, newsletters
    - c. Share reports with government agencies
- 2. School Administrator
    - a. Share report with the instructor
    - b. Share reports with the advisory and school board members
    - c. Share reports with the local community
    - d. Share reports with the students whenever pertinent

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REPORT OF GROUP A-3
ON
STATE DIRECTED EVALUATION OF STATEWIDE PROGRAMS

States are required to evaluate their programs of vocational education quantitatively and qualitatively in terms of specific objectives at local and state levels as set forth in their plans.

Group A-3 of the National Conference on Improving Vocational Education Evaluation focused attention on strategies and procedures of evaluation that can be used as a "state directed evaluation of statewide programs."

The following is a consensus of ideas developed by the group.

I. Definition of Product Evaluation

It is recognized that there are two major kinds of evaluation, namely process evaluation and product evaluation. This committee believes that product evaluation is of much greater importance at our present state of development than is process evaluation. We define product evaluation as a system of determining the degree to which program objectives, expressed in terms of the quality of our product, have been achieved. The system includes:

A. Determining the program objectives

B. Identifying measurable criteria relating to the objectives

C. Developing instruments for collecting data on the above objectives

D. Collecting the data

E. Analyzing and interpreting data

II. Role of Evaluation in Decision-Making

Evaluation is an integral part of the decision-making used in planning and improving programs.

When evaluation reveals a discrepancy between objectives and outcomes, it serves to assist the "decision maker" to decide what areas should be investigated further to identify probable causes for the discrepancy.

III. Scope and Objectives of Vocational Education and Their Relationship to Evaluation

Those persons to be served by the Vocational Education Amendments of 1968 are specified as secondary, post-secondary, adults, disadvantaged, and handicapped.

The purpose of a vocational education program is to prepare persons for jobs in recognized occupations as related to the needs of an area.

We believe the objectives should clearly indicate the number in each of the categories of persons to be served. The following is an example of a suitable format:

> To satisfactorily place 200,000 handicapped persons in gainful employment per year.

IV. Basic Data Requirements for Effective Evaluation

To accomplish an objective as provided in the above example, the following are types of basic data that may be required:

A. Number of Students Employed

B. Salaries

C. Job Stability

D. Job Performance

E. Employee Satisfaction

F. Upward Mobility

V. Appropriate Techniques for Obtaining Data Needed

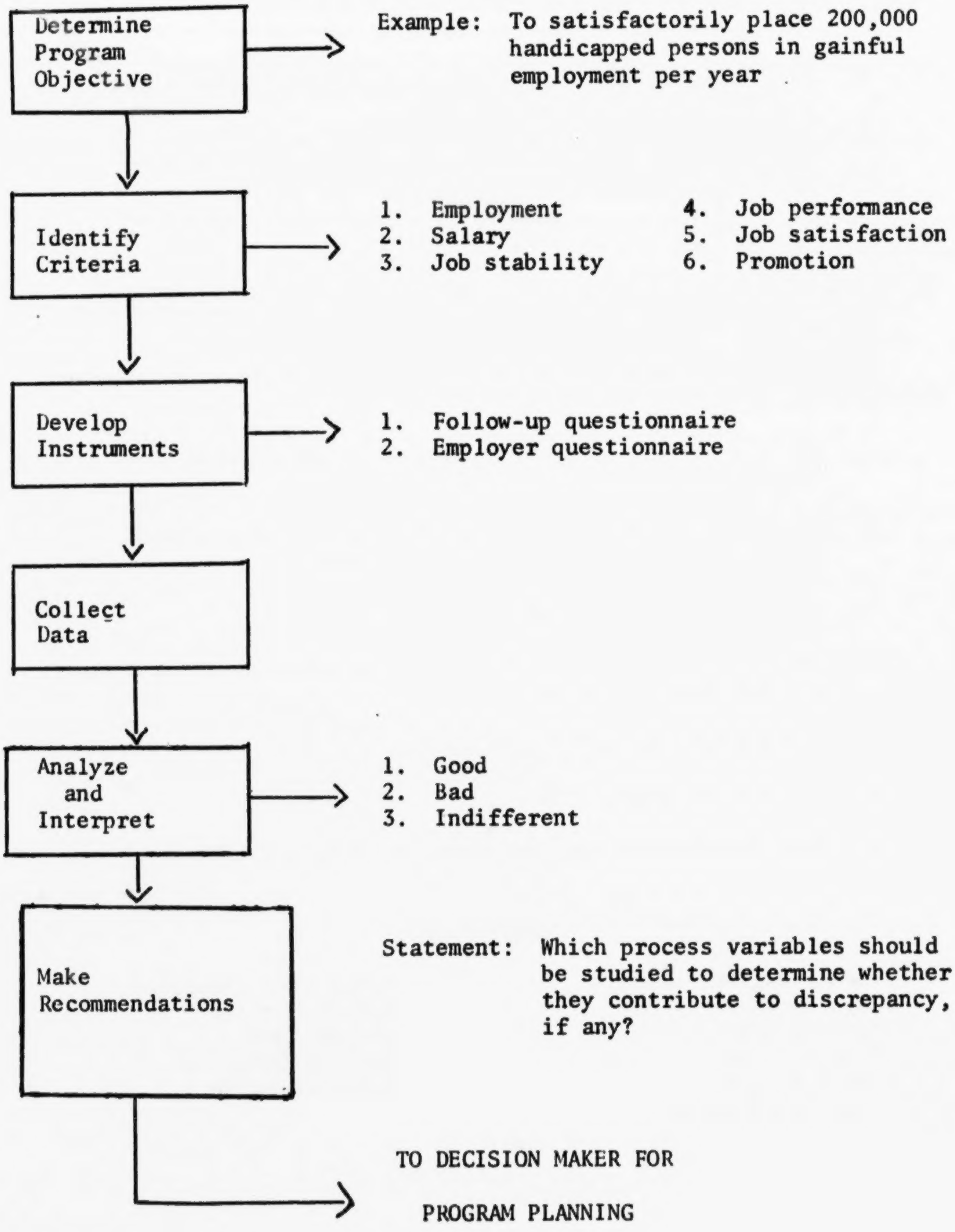
The following are recommended steps for obtaining the data needed:

A. Determine Instruments Required
   1. Student follow-up questionnaire
   2. Employer opinionnaire

B. Implement Procedures of Instrument Development
   1. Review the literature including ERIC indexes
   2. Review of current, obtainable instruments

C. Establish Criteria for Instrument Design
   1. Manageable
   2. Cost
   3. Validity and reliability

PRODUCT EVALUATION


Determine Program Objective
Identify Criteria
Develop Instruments
Collect Data
Analyze and Interpret
Make Recommendations

Example: To satisfactorily place 200,000 handicapped persons in gainful employment per year

1. Employment
2. Salary
3. Job stability
4. Job performance
5. Job satisfaction
6. Promotion

1. Follow-up questionnaire
2. Employer questionnaire

1. Good
2. Bad
3. Indifferent

Statement: Which process variables should be studied to determine whether they contribute to discrepancy, if any?

TO DECISION MAKER FOR PROGRAM PLANNING

VI. Procedures for Organizing, Interpreting and Disseminating Evaluative Information

The following procedures will be required to establish the data in a usable form:

A. Organize Data (machine or manually tabulate)

B. Analyze Data, Draw Conclusion and Make Recommendations

C. Prepare Final Report and Disseminate:
   1. Abstracts to local education agencies evaluation
   2. Full report to decision makers and planners
   3. Others

VII. Administrative Procedures to Implement a Viable Evaluation Program

The following steps are recommended to implement an evaluation program:

A. Decision maker appoints an evaluator and provides the resources;

B. Evaluator proposes an evaluation plan for discussion with staff, advisory council and others;

C. Revise plan if applicable;

D. Involve directors of local education agencies in discussion and refinement of plan;

E. Pretest and revise if applicable;

F. Execute the plan;

G. Feed information back to decision maker and others.

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REPORT OF GROUP B
ON
STATE DIRECTED EVALUATION OF LOCAL PROGRAMS

State directed evaluation should provide a comprehensive means of continuous evaluation as a leadership function by which coordination of the total state's efforts and objectives in vocational education may be achieved. To be effective evaluation must have involvement of those who are to be affected.

In order to have compatible patterns of evaluation throughout the state, the state will assist the districts with evaluative instruments, consultative services and other resources as needed.

The evaluation will provide an overall picture of vocational education and help establish priorities within local districts and the state. It will also provide for articulation between the state's other elements of education in order to serve the needs of the total population.

I. Role of State Directed Evaluation in Sound Educational Decision-Making

In order to establish the role of state directed evaluation the following functions of evaluation have been identified:

A. National Functions - Gather basic data, project needs, provide information to states about occupational education needs and trends of occupations, interpret data and relay to states in appropriate documents.

B. State Functions - Translate this data into analysis of social and economic needs of the state. Provide information to local districts and assist them in developing effective programs related to occupational needs and resources. Evaluation must involve individuals from the local and state level who represent education, industry, parents, students and others.

C. Local Functions - Study target population, individual, industrial, business, and service needs, and labor force mobility. Interpret information received from the state and translate into educational programs and activities necessary to carry out their role.

Evaluation is required at all levels to act as a quality control check on decisions that have been made in program planning and implementation.

II. Scope and Objectives of Vocational Education and Their Relationship to Evaluation

A. National objectives shall be delineated down through state and local levels with consideration being given at each level to their application.

B. Objectives cannot be prescribed for statewide and local situations because their feasibility must be considered in regard to resources (human and physical) at both levels.

C. Evaluation must be accomplished in terms of measurable, attainable objectives. Objectives must not be changed before completion of evaluation for a given period (usually one year). Evaluation must be a continuous process rather than a one-year or five-year event. Its purpose is to point out strengths and weaknesses in programs to bring about improvement.

III. Basic Data Requirements

A. Hard Data
   1. Manpower needs of local, state, region and Nation
   2. Student population, enrollments, dropouts, and graduates
   3. Mobility of students - migration through follow-up studies
   4. Special needs population
      a. Socio-economic
      b. Physical-mental ability
   5. Cost analysis
   6. Local resources and tax base
   7. Instructional content - overview of prepared curriculum material

B. Soft Data
   1. Other institutions offering similar programs (i.e., private schools)
   2. Administration, leadership, and consultative services availability and use
   3. Advisory committees involvement
   4. Continuity and schedule of evaluation process
   5. Realization of limitations beyond local or state control which influence effective evaluation (i.e., certification teacher/student ratio etc.)
   6. Cross-section of local people involved in the evaluation process
   7. Outside accreditation and licensing agencies (i.e., apprenticeship requirements)
   8. Attitudes of staff, administration, students, unions, and employers
   9. Self-evaluation subject to advisory council review
   10. Final product effectiveness

IV. Obtaining Data

A. Types of Instruments
   1. Student follow-up or survey instrument
   2. Needs survey (employment, unemployment, includes student population, etc.)
   3. Cost accounting and analysis (local support - tax base or ability)
   4. Curriculum survey
   5. Employer attitude survey and personal contacts
   6. Survey of and by local crafts, industry and business of equipment and facilities
   7. Student characteristics (entrance and exit forms, etc.)

B. Procedures for Instrument Selection
   1. Involvement of local and state instructional and supervisory personnel, business and industry, and students
   2. Provision of guidelines and/or consultant help for local levels to develop the instruments
   3. Provision of prior research materials and instruments
   4. Statistical technique and computer assistance
   5. In-service training of instrument developers

C. Criteria for Instrument Selection
   1. Instrument selection committee and review by local director, local and state advisory councils, employers, unions, and state departments of vocational education
   2. Evaluate, up-date and refine instrument continually

V. Procedures for Organizing, Interpreting, and Disseminating Evaluative Information

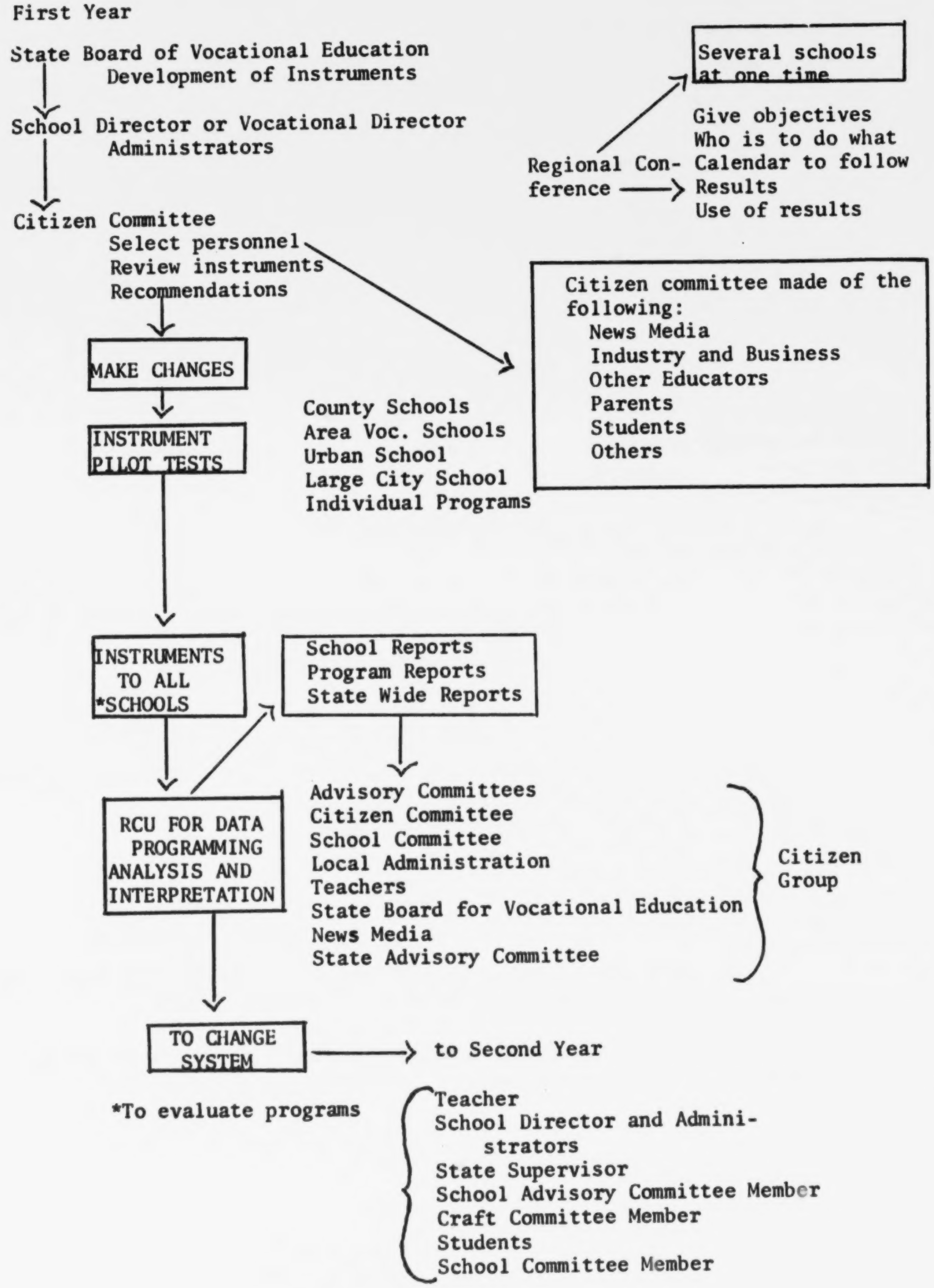
A. Organization of Data
   1. List schools by total scores
   2. List schools according to sub-area ratings, for example: total facilities, administration, staff involvement, and pupil services
   3. List of programs by services
   4. List of programs by individual occupations, for example: auto repair, sheet metal, and agricultural business
   5. List of data items by: school size, community size, resources size, area schools, comprehensive schools, and county schools

B. Interpretation of Data
   1. Preparation of analysis charts, graphs, and narrative will be the responsibility of the Research Coordinating Unit or its equivalent with the close collaboration of vocational division staff.
   2. Results should be reviewed with local administrators before final publication and distribution.

C. Distribution of Evaluation Report
  1. Data and interpretation of data reports should be made available to:
    a. State board of education
    b. Local school administration
    c. Local teachers
    d. Local school advisory council members
    e. Local citizens' committee members
  2. It is recommended that report copies be mailed to interested individuals
  3. Distribution dates should be a part of the planning calendar

VI. Administration Procedures of Evaluation Program

A. First Year



State Board of Vocational Education
Development of Instruments

School Director or Vocational Director
Administrators

Citizen Committee
Select personnel
Review instruments
Recommendations

MAKE CHANGES

INSTRUMENT PILOT TESTS

County Schools
Area Voc. Schools
Urban School
Large City School
Individual Programs

Regional Conference

Several schools at one time

Give objectives
Who is to do what
Calendar to follow
Results
Use of results

Citizen committee made of the following:

- News Media
- Industry and Business
- Other Educators
- Parents
- Students
- Others

INSTRUMENTS TO ALL *SCHOOLS

RCU FOR DATA PROGRAMMING ANALYSIS AND INTERPRETATION

School Reports
Program Reports
State Wide Reports

Citizen Group:

- Advisory Committees
- Citizen Committee
- School Committee
- Local Administration
- Teachers
- State Board for Vocational Education
- News Media
- State Advisory Committee

TO CHANGE SYSTEM → to Second Year

*To evaluate programs

- Teacher
- School Director and Administrators
- State Supervisor
- School Advisory Committee Member
- Craft Committee Member
- Students
- School Committee Member

B. Program Product Evaluation Formula

Below is a formula to objectively compare vocational programs on a product basis.

Advantages of this formula are:

1. Data is now available as basis for Federal reports with the exception of per pupil cost (F) by programs.
2. It is applicable to all schools and all programs in the state.
3. Objectivity

Explanation of formula:

J/I Is an index of the holding power of the program. It is important because students leaving programs cannot be influenced further by them.

C/N Represents the success of the program in terms of placement related to training.

F Is the cost control facts

E Is important to the placement of those completing programs. Manpower needs rated from 1 to 10 will provide an equal weighting of the three numerator factors. Data source is state employment security office.

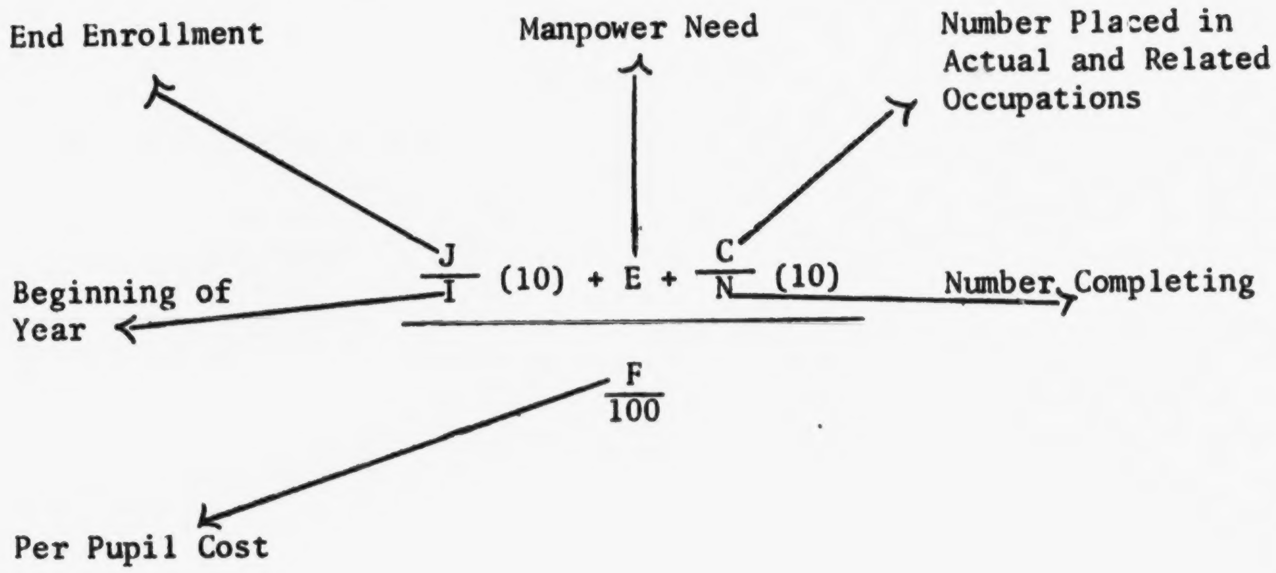
Cost factor items include:

Teacher salaries
Administrative costs
Guidance and placement costs
Equipment and tools
Debt service
Materials for instruction
Other

Low enrollment with low pupil-teacher ratio will result in a lower rating because of high per pupil cost factor.

Training for occupations low in terms of manpower needs will result in a lower rating.

PROGRAM PRODUCT EVALUATION FORMULA


End Enrollment
Manpower Need
Number Placed in Actual and Related Occupations
Beginning of Year
Number Completing
Per Pupil Cost

$$\frac{\frac{J}{I}(10) + E + \frac{C}{N}(10)}{\frac{F}{100}}$$

Key:

C	Number of students placed in occupation for which trained or in a related occupation
E	State labor manpower needs index number
F	Per pupil costs - this program
N	Number completing this year
I	Fall enrollment in program
J	End of year enrollment

Cost factor is important because of limited funds and great numbers of persons needing vocational education.

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REPORT OF GROUP C-1
ON
STATE ASSISTED EVALUATION OF LOCAL PROGRAMS

After three days of soul-searching, philosophizing, debating process versus product, and numerous other activities characteristic of a frustrated conglomerate, Group C-1 came up with the following premise: Group A would develop criteria, objectives, and a general model for statewide evaluations. Group B and Group D would do the same for local evaluation (Group B as state directed and Group D as locally directed).

The logical input left to Group C would be to develop the model of administrative procedure which could be used as a basic macro procedure to give optimum assistance to evaluators of local programs.

Primarily through the untiring efforts of individual members of the group, two major documents were produced with consensus approval. The first is a flow chart of evaluation procedures showing state level and local level activity responsibilities. The second is a macro event chart indicating the time sequence and estimating the time required for each phase of the operation. The event chart is prepared at the macro rather than micro event level so that any state can use it with the flexibility necessary to account for its own perculiar problems.

Within the 28 charted events are implications for specific training programs developed at the state level for both state and local level evaluation staff. There must be training or, in some cases at least, face to face communication in such areas as: design, development of objectives, development of instruments for data collection, use of instruments, and interpretation of data analysis.

There are implications for services from the state level in furnishing consultants at all stages of the evaluation process. Further, the states must plan to render diagnostic services specifically based on the evaluation - after the evaluation has been completed.

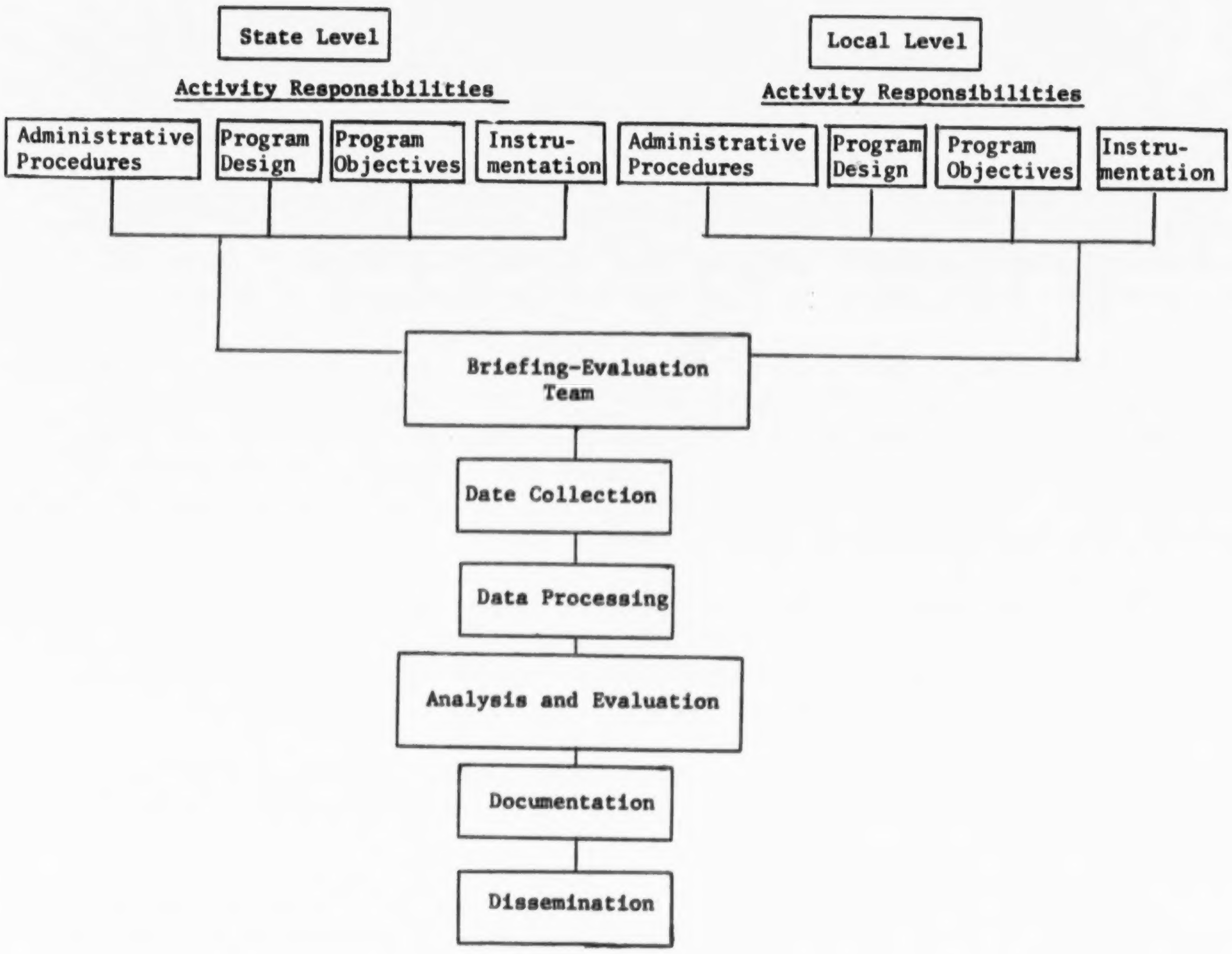
These two documents, we believe, would enhance the probability of practical usage of the guideline document which will result from this conference.

Our group would like to recommend that the five-year projected State Plan include a plan of evaluation which would be increasingly comprehensive in scope. We would urge that evaluation models from all presenters at this conference be studied intensively for possible usefulness in your state.

Finally, other consensus items are included as premises to our report on the task of state assisted evaluation of local programs.

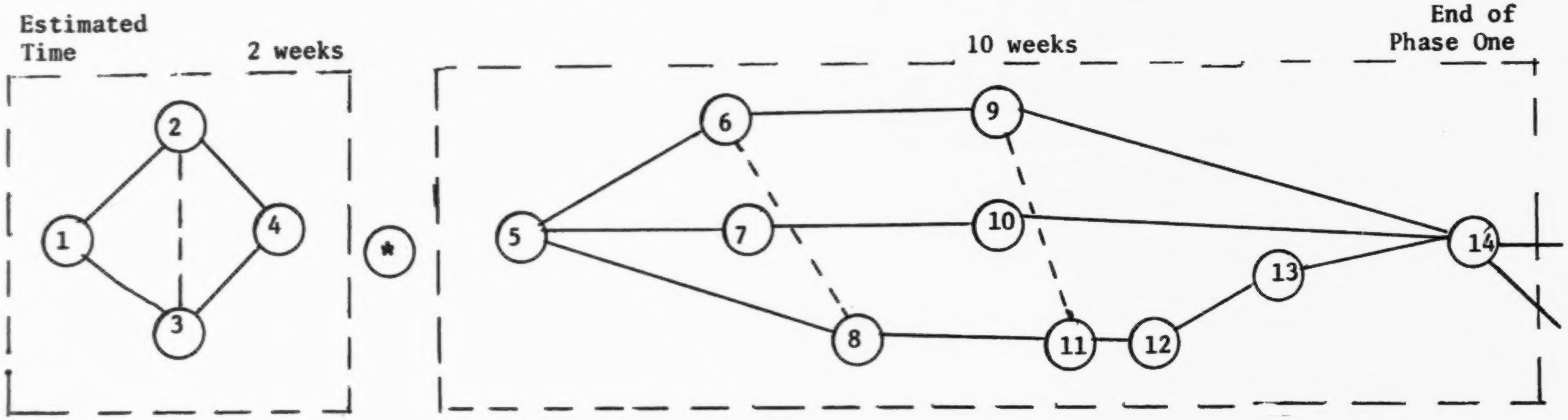
EVALUATIVE PROCEDURES

Flow Chart


State Level
Activity Responsibilities
Administrative Procedures
Program Design
Program Objectives
Instru- mentation
Local Level
Activity Responsibilities
Administrative Procedures
Program Design
Program Objectives
Instru- mentation
Briefing-Evaluation Team
Date Collection
Data Processing
Analysis and Evaluation
Documentation
Dissemination

MACRO EVENT CHART

State Assisted Local Evaluation



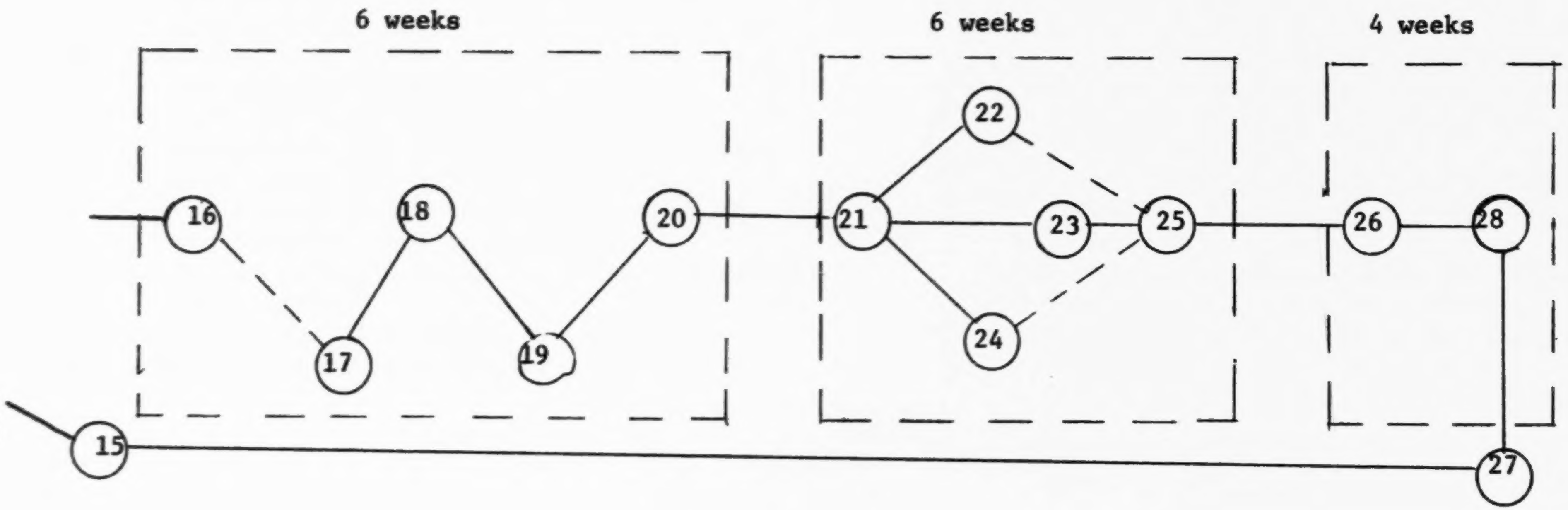
EVENTS

1. Start the evaluation project
2. Selection of local committee (school and lay citizens)
3. Selection of state committee (state department and advisory committee members)
4. Identification of coordinating committee This committee of local and state representatives drawn from state department and local organizations would be the steering committee.

*. Development of administrative process This would include the determination of physical resources, personnel, time schedules, etc.

5. Development of project design
6. Start identification of evaluation objectives (Objectives should be compatible between state and local levels)
7. Start identification of evaluation teams
8. Start development of the data collection instruments
9. Complete project objectives
10. Complete selection of evaluation team
11. Complete draft of the instruments
12. Field test the instruments
13. Complete instruments
14. Comprehensive review of Phase I

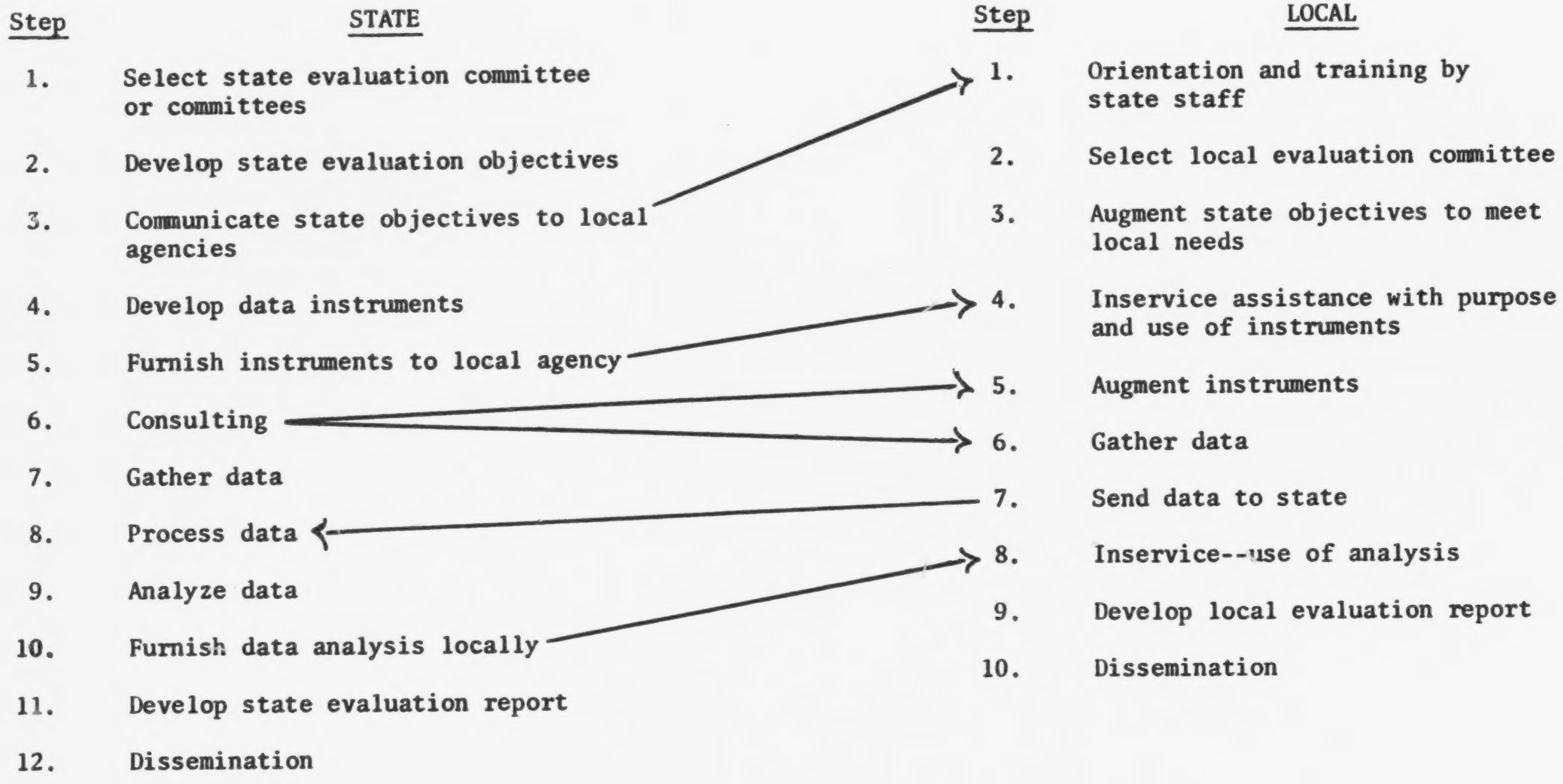
MACRO EVENT CHART (cont.)


6 weeks
6 weeks
4 weeks
15
16
17
18
19
20
21
22
23
24
25
26
27
28

EVENTS

15. Start dissemination (training of teams, publicity, etc.)
16. Start data collection
17. Evaluation team orientation
18. Start coding
19. Complete data collection
20. Start tabulation procedures
21. Start data analysis
22. Start tables, maps, documentation
23. Start interpretation
24. Start narrative
25. Complete data analysis and interpretation
26. Complete narrative
27. Complete dissemination
28. Complete project

ACTIVITIES DIRECTLY ASSOCIATED WITH A STATE ASSISTED LOCAL EVALUATION



Step	STATE
1.	Select state evaluation committee or committees
2.	Develop state evaluation objectives
3.	Communicate state objectives to local agencies
4.	Develop data instruments
5.	Furnish instruments to local agency
6.	Consulting
7.	Gather data
8.	Process data
9.	Analyze data
10.	Furnish data analysis locally
11.	Develop state evaluation report
12.	Dissemination

Step	LOCAL
1.	Orientation and training by state staff
2.	Select local evaluation committee
3.	Augment state objectives to meet local needs
4.	Inservice assistance with purpose and use of instruments
5.	Augment instruments
6.	Gather data
7.	Send data to state
8.	Inservice--use of analysis
9.	Develop local evaluation report
10.	Dissemination

PREMISES

Premise 1: Neither state nor local objectives can be substituted for National goals, nor can local goals be substituted for state goals. Therefore, state and local level objectives must encompass the objectives of the next higher level--but may include additions for their specific levels.

Premise 2: Vocational education has a general purpose as defined in the 1968 Amendments. Evaluation is the comparison of results of vocational education to the norms stated in objectives which must logically be obtained to fulfill the purpose of vocational education. The limitation of resources and valid evaluations are the only variables which furnish information for making sound educational decisions. Obviously, the decision maker must be qualified to use the information if he is to make a logical (and sound) decision.

Premise 3: Duplication of data gathering at different levels is not efficient (disregarding validation research). The kinds of information needed at all levels to make valid evaluations would be similar. Therefore evaluation data must be communicated in both directions in order to avoid duplication.

Premise 4: As a generalization, the expertise for developing a sound evaluation model and initiating the model is most likely to be found at the state or National levels. The data gathering process is more likely to be most efficient at the state and local levels. Therefore, a chain of training programs must be initiated at the state and/or National levels before the evaluation system can be made operational.

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REPORT OF GROUP C-2
ON
STATE ASSISTED EVALUATION OF LOCAL PROGRAMS

Since this committee had no clearcut definition of evaluation, each individual came with his own interpretation of the word, and a consensus was impossible. All of the committee members agreed that evaluation is a continuing process; however, what evaluation encompasses is subject to discussion. With these varying definitions, it was impossible to agree on the role of evaluation. We agreed that evaluation could include the following:

I. To determine if objectives have been met in terms of the product;

II. To determine efficiency in the use of resources, both human and non-human;

III. To aid us in directing future program planning;

IV. To determine how well we are serving society;

V. To point out unmet needs of the students;

VI. To establish a baseline from which to make future judgments.

This committee believes that local people should be responsible for evaluation of their programs with assistance from the state vocational education staff. In the fulfillment of this assistance role, the state agency should make known the availability of personnel and materials developed jointly by groups of local and state personnel.

The scope and objectives of vocational education should be based on the needs of the people to be served in a local community; and secondly, on the occupational opportunities in an area as large as the mobility flow of the persons trained. The programs should prepare students for entry level employment or for upgrading skills of previously or currently employed persons. These programs are to be on a continuum, beginning in the elementary school and allowing for spin-off at any point through the adult level. Entry should be provided for at all levels.

Student experiences are to be provided in school and on the job. Objectives should be stated in behavioral and measurable terms. These objectives should reflect the philosophy of vocational education on a local, state, and National level.

If evaluation is accepted as measuring the product relative to achievement of objectives, two types of data are required. First, baseline data should be gathered to determine the present level of students in terms of the objectives. Secondly, output (outcome) data is to be required for a successful measurement of the effectiveness of the program. This type of evaluation would determine the movement from baseline to output (outcome).

In order to obtain this data, the following types of instruments are needed:

- A. Achievement tests (pre-tests and post-tests);
- B. Aptitude tests;
- C. Attitude inventories;
- D. Follow-up studies;
- E. Questionnaires;
- F. Interviews.

Procedures for instrument development should include:

1. Referral to research in the area of instrument development;
2. Consultations with specialists in areas of evaluation (economist, psychologist, etc.);
3. Joint group work of state and local personnel;
4. Workshops and in-service training for local personnel.

In selecting and developing instruments, the following must be considered:

- a. Does the instrument provide the data needed for the evaluation?
- b. Is the instrument easy to administer?
- c. Is the cost of the instrument reasonable in terms of resources available?

The local committee, under the supervision of the local director of vocational education and assisted by state personnel, should be responsible for organizing and interpreting the evaluative information. The information should be disseminated to all people involved in the evaluative process and to those persons in areas related to the program. The information should be available to others through the office of the local superintendent. It is to be a local decision as to the further dissemination of the information. If it is decided locally to hold a public meeting, state people should be available for assistance. It must be emphasized that there be a positive attitude toward the evaluation throughout, and that all efforts should be toward an accurate interpretation of the evaluation.

The necessary administrative procedures for developing and implementing a viable evaluation program should involve the total commitment of the administrative staff, the teaching staff, students, and advisory committee members. Evaluation should be initiated by the local administration with the approval of the local board of education. The local administration should make available sufficient resources with which to do an effective job. Personnel should be assigned and given specific duties to carry out the evaluation. Responsibilities of these persons would be in the following areas:

A. Establishing a flow chart and time schedule (PERT);

B. Working with local committees in organizing and interpreting the results of the evaluation;

C. Planning and conducting workshops for implementing the evaluation;

D. Working with local advisory committees and students in gathering information;

E. Assisting in the interpretation of evaluation results.

The administration should assist in the maintenance of a positive attitude on the part of all persons involved throughout the entire evaluation period.

Program changes and improvements as indicated by the evaluation should be made if the evaluative process is to be of any value.

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REPORT OF GROUP D-1
ON
LOCALLY DIRECTED EVALUATION OF LOCAL PROGRAMS

Sound evaluation techniques have played a very minor role in the educational decision-making processes heretofore. The more traditional factors of available funds, human resources, fulfillment needs, and employment opportunities have, however, received primary consideration in most educational decision-making tasks. It is rather apparent at this time that a large part of the rather meager evaluation effort has also been directed at evaluating processes rather than the product. This approach tends to create a "closed shop" system. Only educators and auxiliary personnel are considered qualified to evaluate the educational process. These assumptions are not intended to diminish the importance of process evaluation, but it does pose some question as to the horizontal and vertical bounds of the segments which comprise the evaluation band of the educational spectrum. For the sake of verisimilitude, it is imperative that the various parts of the total evaluation system should be assigned relative value indices.

I. Role of Evaluation in Sound Educational Decision-Making

Ideally, a good evaluation system should be comprised of a proper blend of both process and product data so as to equate the accomplishment of predicted outcomes in terms of program objectives. Some key sources of input data would originate from graduates concerning the kinds and level of employment they obtain, their individual upward mobility within their occupational area, lateral mobility into other occupations, renumeration rates, suggestions as to how the training could be improved, personal evaluation of instructional staff and facilities, and other constructive comments. Business and industry must be contacted by survey or other means to provide input evaluational data concerning individuals and programs. Information, thus gained, is paramount to establishing the validity of other data. Some other techniques of obtaining evaluation data include: the proper use of advisory committees, placement activities, self-evaluation (students and faculty), accreditation efforts for membership in regional and local agencies, special study reports, ad hoc committees, credit bureaus, newspapers to graduates, tax rolls, Department of Labor surveys, census reports, teacher evaluation, suggestion boxes, counseling and guidance activities, consultants and other source channels.

Considerable conversion time can be saved if the original data input are codified according to the taxonomy of education currently used by the U. S. Office of Education.

In many instances there are sufficient educational data available to properly assist with the decision-making process. However, it is quite often not organized into meaningful format and style; therefore, the decision maker does not relate the data to the problem at hand and concomitantly this valuable step in the sound decision-making procedures is bypassed. The mere collection of evaluation data and statistics serves no useful purpose unless the print-out documents provide practical and worthwhile insight into problem areas or reinforces the successful element of the operational programs. The credibility of all evaluation projects should be verified before the resulting conslusions are used to influence the decision maker. Unless the evaluation effort is tailored to meet the local needs and also encompasses the concept that the net values of any program is a sum of the services provided and skills developed by the students, the findings of the evaluation have questionable value to the decision-making processes in relation to a specific situation.

II. Scope and Objectives of Vocational Education and Their Relationship to Evaluation

The scope and objectives of vocational education are dependent upon the aspirations and commitments of a local community. It should be the intent of any program to have zero rejects. The evaluation effort should be geared to provide data to improve or reinforce existing programs so as to achieve zero rejects, and at the same time, continue to serve students, business, and industry.

III. Basic Data Requirements for Effective Evaluation

Does the program help students secure and retain employment? This can be answered in many ways. The success of a program is usually measured, to some degree, by the percentage of graduates who are actually placed in the occupation or related occupations for which they were trained. Job satisfaction does play an important role in the successful and continued employment of graduates. Determination of self-satisfaction needs is a difficult task, and is best accomplished by analyzing demonstrated behavior, habits, and attitudes. Information concerning habits and attitudes may be acquired through surveys and by personal interviews. Is the evaluation data actually being used to effectively restructure programs and objectives?

IV. Appropriate Techniques for Obtaining the Data Needed

Numerous types of data instruments have already been discussed in the first section of this report. Categorically, these may be listed as follow-up surveys, self-evaluation, newsletters, teacher evaluation of students, self-evaluation by faculty and staff, statistical reports compiled by governmental agencies, and many others. Depending upon the intent of a survey instrument, its development should involve a combination of any or all of the following: staff members, administrators, business and industry representatives, students, lay people, and members of the student personnel staff. Once the basic instrument has been designed it should be subjected to a trial testing in the field. This can best be accomplished by selecting a representative sampling of the individuals to be surveyed. The questions should be simply stated; they should be concise and relevant to the respondent. Also, the questions should be stated in such a manner that the responses would be purely objective. Bear in mind that some type of useful document must be the end result of this survey; therefore, the format and style should lend itself to accomplishing this end. The final selection of evaluation instruments will usually be dictated by the purposes of the evaluation, available manpower, cost, and so forth.

V. Procedures for Organizing, Interpreting, and Disseminating Evaluative Information

The output documents of the survey should be brief, readable, and serve a useful prupose. It has been suggested that the results can best be disseminated to a captive audience, such as a dinner meeting or other command performance. There are no established rules concerning the interpretation of a survey--just as true beauty is reflected in the eyes of the beholder. However, strong implications evidenced by a particular survey do tend to reinforce command decisions in such a way as to motivate all members of the team.

VI. Administrative Procedures Effective in Developing and Implementing A Valuable Evaluation Program

It is important that the administrator observe certain rules of protocol in developing and implementing an evaluation program. Although he may like to include people from many fields such as teachers, advisory committees, employers, students, and so forth, quite often a large group is not only unwielding but serves little useful purpose. One method would be to hold an inservice meeting with key staff members to outline in general terms the purposes of the evaluation program. If people from the business and industrial communities are to be involved, then it should be clearly understood from the beginning that they are an ad hoc committee and will serve only in an advisory capacity. Also, this is a ready-made way to dissolve a committee once the needs for program organization have been fulfilled. Once the evaluation has been completed, recognition should be extended to those individuals who really participated toward its successful completion. In most cases, there should be a plan for dissemination of certain information to the people who responded to the survey.

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REPORT OF GROUP D-2
ON
LOCALLY DIRECTED EVALUATION OF LOCAL PROGRAMS

I. Definition of Local Programs

The term "local programs" may include those programs designed to serve students at the following levels:

A. High school (secondary)

B. Post-high school

C. Two-year associate degree

D. Adult

E. Disadvantaged and handicapped

Local programs are administered under a variety of school organizational plans which encompass units ranging from single districts to multiple county districts.

II. Definition of Locally Directed Evaluation

Locally directed evaluation is a systematic process carried out to determine whether the objectives of a local program are being achieved. The process involves gathering appropriate data concerning the program and involving the appropriate people within the district being served in order that sound program planning, curriculum revision, and budgeting decisions can be made.

III. Local Program Evaluation Should Involve:

A. Advisory committees representative of the community being served*

B. Guidance, and counseling personnel

C. Administrative staff

D. Teaching staff

E. And others as specified in the Vocational Amendments of 1968, Section 104

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*Advisory committees should be made up of persons who are representatives of the specific occupational areas being served by the program.

F. Employers

G. Students

IV. Questions Pursued with the Interaction Panel

A. Who should develop the instruments for evaluating local programs?

B. What or who are the decision makers? (who all is involved)

C. Who should be involved in the evaluation of local programs?

D. What should be the role of the former directors of the various service areas? Are they now program specialists - program managers?

V. Points Made by Dr. Harold Byram on Evaluation of Local Programs

A. It is important to identify specific objectives to be tested and relate them to the criterion questions.

B. Such a procedure provides for:
1. A statement of the objectives
2. Criterion questions are designed to specify the data needed for determining if the objective is being attained.

C. Standards may be established against which results will be compared.

D. If results do not come up to the standard we might find that:
1. The standard is not realistic
2. Items are not worded correctly on our instrument
3. The objective is not relevant

VI. Two Basic Problems Related to Vocational Education Evaluation

A. An unrealistic belief that most students should prepare for college

B. Failure to recognize the occupational opportunities which require less than college or university training.

VII. Scope of Evaluation

There is a need to encompass both general and vocational education when educational programs are evaluated. Such evaluation could provide a more accurate and realistic view of vocational education within the total educational system.

VIII. Guidelines and/or Principles Concerning Local Directed Evaluation of Local Programs

A. Role of evaluation in sound educational decision-making:
   1. Sound decisions cannot be made without evaluation;
   2. Evaluation should be a tool in decision-making and program planning and not an "end product";
   3. Evaluation must be an articulated effort which will provide evidence for decision-making at local, state and National levels.

B. Scope and objectives of vocational education and their relationship to evaluation:
   1. Suggested aspects for which objectives should be stated;
      a. Prepare for gainful employment
      b. Prepare for adjustment to employment (getting along with people)
      c. Provide training for disadvantaged and handicapped
      d. Provide inservice training for entire school staffs to prepare them for working with disadvantaged students
      e. Equip students for adapting to a rapidly changing employment
      f. Provide occupational orientation in the "middle school"
      g. Provide training in how to seek out and obtain employment
      h. Provide guidance and counseling
      i. Provide improved accrediting procedures
   2. Scope
      a. Vocational education should reach all ages in all locations
      b. Provision should be made for the socially, environmentally and physically disadvantaged.

C. Basic data requirements for effective evaluation:
   1. The minimum vehicle for local evaluation may be state initiated and should include essential data to comply with state and Federal regulations. However, this should be considered minimum for local evaluation and provisions should be made for gathering needed local evaluative data which reflect unique objectives.
   2. The basic data collected for effective evaluation are those data which tell us whether objectives are being attained; and those objectives should reflect personal needs of individuals as well as broader social and economic needs.

D. Appropriate techniques for attaining the data needed include the use of staff committees, consultants, and advisory committees to:
   1. Use other plans that have been developed and tested
   2. Bring in others who have had experience in this field

3. Gather as much data and plans as possible and modify them for use in your district or state
4. Gear toward computer usage
5. Involve students in preparing instruments and developing forms for gathering data for follow-up and evaluation
6. Test instrument on students and faculty
7. Prepare students for follow-up prior to leaving school

E. Use experts and consultants in the field to help organize, interpret, and distribute the findings.
   1. Evaluative information should be put in report form.
   2. The report should be considered public information.

F. Administrative procedures affective in developing and implementing a viable evaluation program:
   1. Involve teaching staff
   2. Structure an evaluative team or group for steering the evaluation
   3. Give evaluation policy status so that it is considered a regular aspect of the educational system.
   4. See VIII, D for list of appropriate techniques.

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APPENDIX H

A GENERAL GUIDE FOR IMPROVING VOCATIONAL EDUCATION EVALUATION

THIS GUIDE WAS WRITTEN FOR POSSIBLE DUPLICATION AND DISTRIBUTION BEYOND INCLUSION IN THIS REPORT; THEREFORE, PORTIONS OF THE FORWARD AND GUIDE ARE REPETITIOUS IN RELATION TO OTHER SECTIONS OF THE FINAL REPORT.

6

FOREWORD

One way in which the United States Office of Education has sought to improve the status of evaluation has been through the sponsorship of short-term training institutes. In addition to developing leadership competencies needed in evaluation, another purpose of these institutes has been to draw upon the talents of the consultants and participants in order to help develop improved strategies and procedures of evaluation.

In keeping with that purpose, a major part of this guide is concerned with presenting viewpoints on which there appeared to be general consensus of agreement among the participants attending the National Institute on Improving Vocational Education Evaluation which was held August 4-8, 1969 at the University of Arkansas. Attention is also given to points and issues on which there seemed to be little agreement among either the consultants or the participants. Finally, some suggestions on how evaluation can be improved are offered.

One of the major activities of the institute was to involve the nearly 100 carefully selected participants in a thorough review and synthesis of the papers presented and the reference materials made available. This review and discussion of the various techniques and procedures available was intended to help each participant obtain additional knowledges and skills needed for improving vocational education evaluation. Secondly, however, and equally as important, the small groups were assigned the task of reaching a consensus, where possible, as to the best strategies and techniques of program evaluation available.

These efforts were summarized and presented in each group's final report. From these reports and the papers presented, it was possible to construct a general consensus concerning the following major areas of concern in evaluation:

1. The role of evaluation in sound educational decision-making;
2. The scope and objectives of vocational education and their relationship to evaluation;
3. Basic data requirements for effective evaluation;
4. Appropriate techniques for obtaining the data needed;
5. Procedures for organizing, interpreting, and disseminating evaluative information;
6. Administrative procedures effective in developing and implementing a viable evaluation program.

While the institute presenters and participants contributed much to the content of this guide, and appreciation is extended to them, at the same time it should be made clear that they bear no responsibility for the conclusions drawn.

A General Guide
for
IMPROVING VOCATIONAL EDUCATION EVALUATION

INTRODUCTION

Both the Vocational Education Act of 1963 and the Vocational Education Amendments of 1968 provide for, and in fact require, evaluation of vocational education programs. The Declaration of Purpose states in part that funds are authorized to . . . "improve existing programs of vocational education" . . . and that persons of all ages . . . "will have ready access to vocational training or retraining which is of high quality" . . . .[13,14]

Before existing programs can be "improved" and before access to programs of "high quality" can be insured, adequate systems and techniques of evaluation must be developed and implemented. The use of quick and often highly subjective devices for appraising the quantity, quality, and cost-effectiveness of vocational programs will not suffice. Educators are gradually recognizing the importance and complexity of the evaluation process but have not yet taken the necessary steps to fully develop and operationalize effective evaluation programs.

Stufflebeam appropriately summarized the status of evaluation when he said, "This measurement of efficacy, or evaluation, is an infant on the educational scene. It lacks an established body of knowledge appropriate to education, sufficient personnel with the necessary competencies and experience, and the techniques and skills to satisfy the legal requirements or needs of the Congress and education."[16]

Moss listed three basic assumptions as justification for his paper on the evaluation of occupational education programs: "Program evaluation is essential to systematic improvement in educational efficiency and effectiveness; an intensification of evaluation activity is highly desirable; much of what little has been done to date in the name of program evaluation is of questionable usefulness."[11]

It is certainly true that most evaluative efforts have failed to provide the valid and reliable data needed to support sound educational decision-making. Reports often contain only impressionistic information and rely heavily on subjective determinations. Past evaluations have focused almost entirely on the educational process--curricular organization, staff activities and qualifications, and physical facilities while ignoring program inputs and program outcomes. Evaluations have too often been an after thought, partial and sporadic, rather than planned, thorough, and continuous.

Evaluation has many meanings and connotations to most people, and vocational educators are no exception. Very commonly evaluation is used to refer to the assessment of individuals rather than programs. To avoid misunderstanding the authors wish to make it clear at the outset that in this guide, evaluation is used to refer only to program evaluation. It is also viewed as a process which seeks program improvement and modification rather than program condemnation.

Further clarification may be obtained by offering the following formal definition of program evaluation:

> Program evaluation is the continuous process of collecting valid and reliable data for the purpose of comparing program outcomes with program objectives. The process is conducted to provide useful information for making sound educational decisions. Educational decisions refer to making a choice among alternatives for action in response to educational needs and limited resources.

Recognizing that sound evaluation techniques have played a very minor role in the educational decision-making process heretofore, attention is first given to a consideration of what the role of evaluation in educational decision-making ought to be.

Role of Evaluation in the Decision-Making Process

There is strong agreement that sound decisions cannot be made without adequate evaluation. Perhaps, of all the many and varied issues which can be raised concerning evaluation, the easiest one on which to get unanimous agreement is that evaluation constitutes an essential input to the decision-making process.

For too long subjective opinion, tradition, authority, and personal experiences have played a major role in most educational decision-making. It is also apparent at this time that a large part of the rather meager evaluation effort has been directed primarily at evaluating processes rather than the product. What little product evaluation has been done has, in most cases, involved a mere "head counting" procedure to determine the number of former students who are employed in an occupation directly related to the vocational program in which they had enrolled.

With few notable exceptions, cost-effectiveness as a method of evaluating vocational and technical education programs has been either overlooked or given up quickly as being too difficult, and yet the fact remains, that whenever an educational administrator decides to spend more on vocational education rather than on general education, a type of cost-benefit decision, though highly subjective it may be, has been made.

The role of evaluation should be viewed as a continuous process of obtaining objective data essential to effective and efficient decision-making and program planning, and must not be viewed as an end product in and of itself. In order for an evaluation to be effective and accepted, it must be a thorough and valid assessment. In order to be efficient, the evaluation effort must be a coordinated and articulated effort which avoids unnecessary duplication and yet provides the factual evidence needed for decision-making at the local, state, and national level.

Another way to view the role of evaluation in decision-making is that it provides information which helps the program manager and/or decision-maker do a better job of allocating the limited resources available to him. He uses the information to help him apply the resources so as to maximize the attainment of program objectives. The interrelationship of objectives to resources, program outcomes, and other important aspects of the planning and evaluation process is illustrated by Coster and Morgan in their model which is reproduced as Figure I. For a detailed description of the planning and evaluation model and its various components in relation to the decision-maker and program manager, the reader is referred to the original paper.[2]

As the competition for financial resources becomes keener and the accountability for these funds more demanding, program evaluation, although admittedly a difficult and largely underdeveloped activity at this time, will be viewed, not as desirable or essential, but as an absolutely mandatory ingredient to the decision-making process at every level. Continuation, expansion and redirection of vocational programs in the future will have to be justified by program managers on the basis of valid and objective data.

Congress has clearly indicated the role it wants evaluation to play. Vocational education is to develop an evaluation system that will ensure that state and federal funds are being spent in the most effective and efficient manner possible. The law requires the appointment of a National Advisory Council and State Advisory Councils whose major role will be to evaluate vocational education programs under their jurisdiction and to prepare annual reports of their findings and recommendations. The advisory councils are only two examples of the many direct and indirect references to the importance of evaluation, which are interspersed throughout the 1968 Amendments.

Scope and Objectives of Vocational Education and Their Relationship to Evaluation

The Vocational Education Amendments of 1968 also contain a congressional mandate for vocational education to redirect, expand, and broaden its scope and objectives. National objectives are stated in terms of target groups and target areas to be served and special priorities to be emphasized. The scope of the vocational education enterprise embraces a variety of programs, populations, and services. These programs and services are to be based jointly on the needs, interests, and abilities of people as individuals, as well as on providing training which is realistic in terms of existing and anticipated job opportunities. The programs are to provide appropriate preparation for persons of all ages which will enable them to enter and make satisfactory advances in employment.

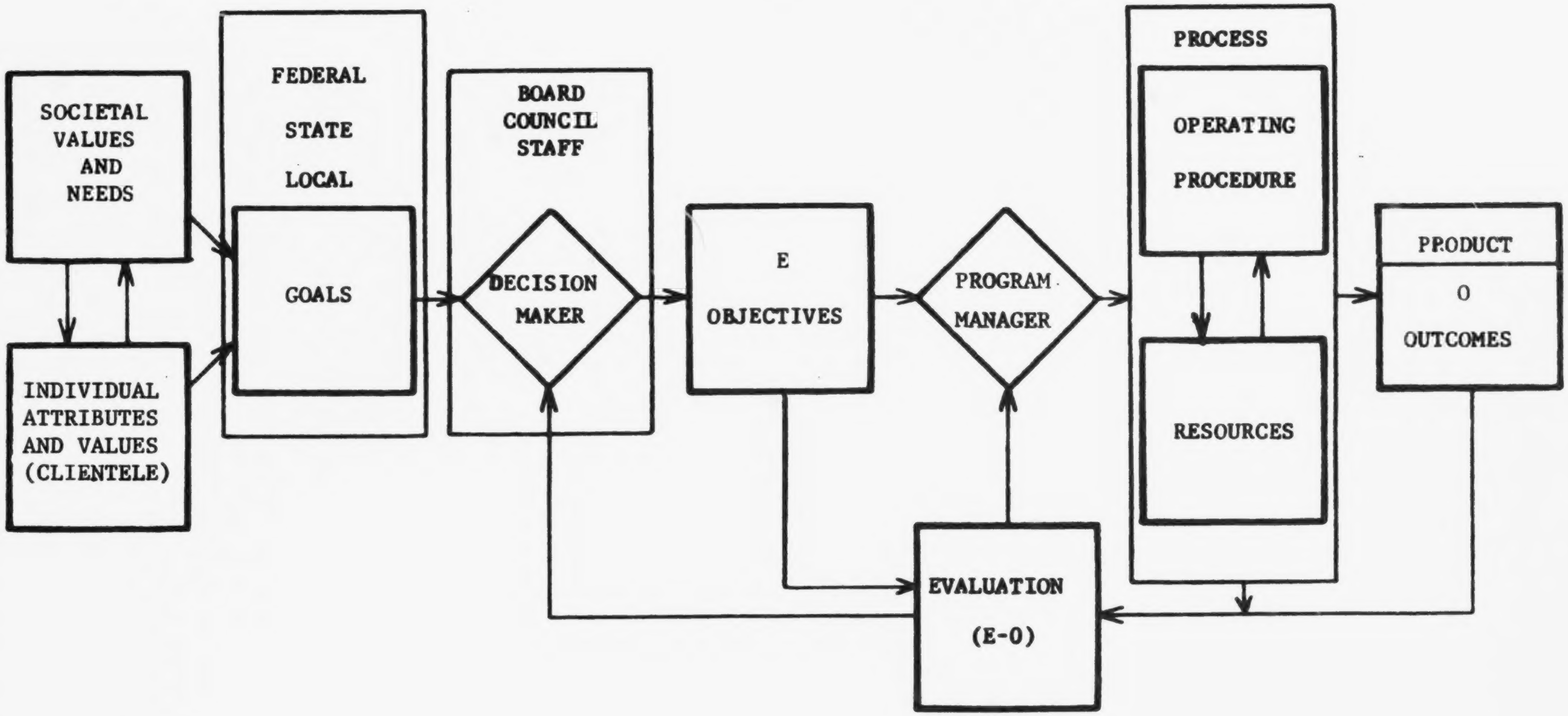
SOCIETAL VALUES AND NEEDS
INDIVIDUAL ATTRIBUTES AND VALUES (CLIENTELE)
FEDERAL
STATE
LOCAL
GOALS
BOARD COUNCIL STAFF
DECISION MAKER
E
OBJECTIVES
PROGRAM MANAGER
PROCESS
OPERATING PROCEDURE
RESOURCES
PRODUCT
O
OUTCOMES
EVALUATION
(E-O)

FIGURE 1

A PLANNING AND EVALUATION MODEL

The relationship of program objectives to evaluation has already been suggested by our definition of program evaluation and is illustrated in Figure I. Stated program objectives, which are the anticipated or expected outcomes, provide one with a basis for comparison with the product or actual outcomes. Without clearly stating objectives to provide a basis for comparison, there can be no evaluation.

Another point on which unanimous agreement is easy to obtain is on the general inadequacy of current program objectives. Objectives at the state and local level, if available at all, are usually rather general and vaguely stated. They usually avoid attending to the specifics of individual programs and are not stated in measurable terms. Under these conditions, programs and services are not easily subjected to either valid or objective assessment.

The importance of clearly specified objectives based on national, state, and local goals is widely accepted. Much work needs to be done in this area, however, as most educators are neither trained nor experienced in writing measurable objectives. Inservice training programs are going to be needed before most vocational teachers or state staff personnel will be capable of stating objectives in measurable terms.

The work of Starr and associates at the Ohio Center on the development of state level program objectives and goal statements is especially noteworthy.[15] They have developed and are now testing a set of quantitative statements for each of four broad program objectives. These statements are designed to permit objective measurement of the extent to which: (a) target populations are being served, (b) local schools assure program quality, (c) programs are accessible to needy students, and (d) state agencies use follow-up and other data in their planning. Once a state has assessed its starting position with relation to each goal and objective, it can set realistic targets for improvement and later evaluate their accomplishment objectively.

Work is also underway in several states on the establishment of written behavioral objectives at the local level. Massachusetts, for example, is undertaking the development of a file of behavioral objectives for each program and the development of a test file for each objective.[10] Several books on writing behavioral objectives have also been published in the last few years.

If we are to compare program outcomes with program objectives as our definition of program evaluation calls for, then we must establish such objectives in a measurable format before we are really ready to evaluate. See Attachment A for a sample format developed by Dr. Jim Hannemann, Vocational Consultant at Oakland Schools, Pontiac, Michigan. As a preliminary step towards determining the effectiveness of the Oakland Vocational Education Centers in the education of youth and adults, he has developed a tentative set of program objectives and identified specific terminal behavior characteristics and discriminatory levels for each objective.

Basic Data Requirements for Effective Evaluation

Anyone who is faced with the task of evaluating a program or programs must eventually answer the question, "What types of data shall be collected?" This is an important question facing every evaluator and yet there seems to be little agreement on what is really needed.

Much of the disagreement centered around whether to emphasize evaluation of the program process or the program product or both. As mentioned earlier, the major emphasis in the past has certainly been on evaluating the process. There are inherent weaknesses involved in utilizing this approach as the major or the only method of evaluation. Moss points out that, "Program characteristics cannot be used as evaluative criteria, for, by so doing, we assume, rather than prove, that those characteristics are good . . . . Almost none of our cherished "principles" of vocational education practice have been empirically validated."[11] It is generally agreed that having information on the educational process is desirable but that such information _per se_ does not guarantee that the objectives of the program have been obtained.[2]

If we are willing to accept the definition of program evaluation set forth earlier--that it is the continuous process of collecting valid and reliable data for the purpose of comparing program outcomes with program objectives--it would seem logical that the primary criteria by which instructional programs are to be evaluated must be the products or instructional outcomes. As Coster and Morgan put it, "The crux of the evaluative problem is the congruence between the actual outcomes of the program and the objectives of the program. The prime concern of the decision-maker is the extent to which these two entities are in juxtaposition."[2] Thus, simply put, the basic data requirements for effective evaluation are those data which tell us how well our previously stated objectives are being attained.

Appropriate Techniques for Obtaining the Data Needed

After determining the type of data to be collected, careful consideration should be given to selecting the most appropriate techniques available for obtaining it. Although a wide variety of techniques are available, two which are appropriate for obtaining data on program outcomes, the mailed questionnaire and the interview technique, merit special attention.

The most widely used and accepted technique is that of the mailed questionnaire or survey form. Although the follow-up questionnaire is being used and widely recommended, it presents problems when attempting to reach certain groups of people. A prime example of a problem situation is getting representative follow-up data on _former_ students. Notice that the group of concern in this case is not just program graduates, but also program dropouts.

Experience has shown that very few dropouts will complete and return a mailed follow-up form. If the evaluation effort is to be geared to provide diagnostic information about the strengths and weaknesses of existing programs so that we, for example, will be able to achieve zero rejects, then we must obtain feedback from all whom the programs are designed to serve and not just its successful graduates.

To obtain feedback from the non-respondent, although more costly, the interview technique on at least a sample basis will probably have to be employed. While the interview technique has its advantages, few if any schools would have the necessary resources for interviewing all former students of selected classes. Where the follow-up procedure is used, consideration should be given to using a combination of the two techniques.

In the Michigan Multi-State Project, Byram and others have developed a guide for constructing a follow-up instrument which appears promising.[9] Basically, it calls for using identified program objectives as a frame of reference in developing and selecting follow-up questions which will obtain the information needed to help evaluate attainment of each objective. Without the use of such a guide or reference, many unnecessary questions are likely to be asked and some necessary ones omitted.

Many states, such as Arkansas, Colorado, and Arizona, and indeed most other states and some local education agencies, have developed follow-up instruments and procedures which would be helpful to anyone devising a follow-up system.

Although follow-ups focus upon former students, they should not be the only means used for studying program outcomes. Assessment of program outcomes through experiments, employer feedback, attitude and achievement tests, advisory committees, use of consultants, and cost-effectiveness analysis should be considered. The final selection of the approaches used will depend upon the specific purposes of the evaluation, available time and manpower, cost, and other factors.

For those planning to conduct process evaluations, a large number of instruments are available. To name a few, North Carolina, Pennsylvania, and New York have all developed instruments containing evaluative criteria which can be used to subjectively judge the characteristics of various vocational programs. The National Study of Secondary School Evaluation has recently finished preparation of the fourth edition of *Evaluative Criteria* which is widely used to evaluate local programs by the six regional accrediting associations.[12]

Procedures for Organizing, Interpreting, and Disseminating Evaluative Information

Even though appropriate techniques are used and good evaluative data collected, unless it is organized into an attractive and meaningful format and style, and the report disseminated to the right persons, little useful purpose will result. The report may be organized by strengths and needs, by program objectives, or in some other manner that is logical for those who are making and using it. The key point to remember is that the collection of the best available data is of little value unless the reports provide concise and worthwhile insight into problem areas or reinforce the successful elements of operational programs.

Interpretation of the data into findings or recommendations is another crucial but essential task of evaluation. Whenever possible the data should be analyzed to show existing relationships between program inputs, including student characteristics; program processes; and program outcomes. The interpretation of data must be accurate and the resultant findings documented. Statistical data should be illustrated with charts and graphs and accompanied by a succinct narrative.

Another important step remains, that of disseminating the report, or preferably reports, to all who were involved in the evaluation process and to all who are concerned about the program. The full report should generally be distributed to all of the decision-makers and program planners. For wider distribution to other interested individuals and the general public, an abstracted or popularized version is far more desirable and likely to be read. It is especially important to provide feedback to all personnel who assisted in supplying the original data.

Administrative Procedures Effective in Implementing a Viable Evaluation Program

Each agency, whether local or statewide in scope will need to develop its own administrative pattern of operation based on variables pertinent to the particular organization. However, several administrative procedures appear important in developing and implementing any effective evaluation program.

There must be consent and a strong commitment to the evaluation effort by the program administrators. This commitment must be reflected in several ways. Sufficient resources with which to do an effective job must be made available. Personnel must be assigned, allotted adequate time, and given the authority and responsibility to carry out the evaluation.

The administration should assist in developing and maintaining a cooperative and positive attitude on the part of everyone involved in the evaluation effort. Perhaps most important is giving the evaluation program status, so that it will be considered a regular and continuing aspect of the educational system. Implementing changes and improvements suggested by the evaluation is one effective way of giving the effort status.

To be effective, evaluation must insure the involvement of those who are to be affected by and responsible for implementing any changes that result from it.

SUMMARY

Before looking at some additional suggestions for the improvement of evaluation, a brief recapitulation of some of the points of agreement and points of disagreement regarding evaluation is provided.

There is wide agreement that the purpose of evaluation is to provide objective data which will enable program leaders to make more rational administrative decisions, and that evaluation must be recognized as a prerequisite to sound program planning and program improvement. There was unanimous agreement on our lack of sophistication in stating program objectives. These objectives, it was felt, must be specified in terms which will allow for more precise measurement of the degree of their attainment. There was also general agreement that programs at all levels--local, state, and national--need to be evaluated quantitatively and qualitatively in terms of the specific objectives set forth. A final point of agreement was found in the need for new and better "tools" of evaluation and for refinement of the ones presently available.

The primary point of disagreement revolves around whether the evaluation effort should be process oriented or product oriented. Many believe that product evaluation is of much greater importance at our present state of development than is process evaluation. Others are inclined toward seeking a more balanced approach, but appear willing, in a trade-off between what is desirable and what is practical, to give priority to product evaluation. A few seem to insist that process evaluations are better understood and accepted by educators, and that they therefore offer the more realistic approach at the present time.

Many persons are unable to agree on a definition of evaluation. This is perhaps a reflection of the controversy over whether the process or product approach is most desirable.

A final point of difference is whether local program evaluations ought to be locally directed and initiated, state directed, or state assisted. The viewpoint expressed on this matter is generally a reflection of the person's position of employment.

Suggestions for Improvement of Evaluation

In concluding, a few general suggestions for improving vocational education evaluations seem in order.

1. It is urgent that state departments and local school systems begin to cooperatively and carefully plan for the collection of data needed to evaluate existing programs and plan new ones.

   Even though some of the methods and procedures now available may later prove to be ineffective, an evaluation system should be established as soon as possible in every school and state in the nation. Valid and objective data on which to base program changes is needed by the decision-makers now.

2. It is equally urgent that persons at all levels seek to improve available evaluative techniques as well as to develop new and better ones.

   Some developmental work on program evaluation has been done and considerable is now underway, but much more research and testing is needed. One of the most promising techniques: cost-effectiveness analysis needs further development and testing. Cost-effectiveness analysis has great practical potential, but unfortunately, lacks, at the present time, sufficient operational utility for widespread use.

3. Evaluation efforts need to be coordinated in order to avoid unnecessary duplication.

   For instance, are the state advisory councils, the state departments of education, and the local schools going to conduct separate follow-ups of the same former students? We would certainly hope not, for the students' sake. Unnecessary duplication of data gathering by the different agencies is both costly and inefficient. To avoid it, close coordination and communication among the agencies involved will be necessary.

4. The implications of the 1968 amendments for evaluation are many and complex; requiring that we learn and implement those procedures and techniques which will most efficiently aid the decision-making process for the attainment of local, state, and national objectives.

   Is it realistic to expect present or future vocational educators to become competent in evaluation without any training? There must be training in such areas as study design, development of objectives, development and use of appropriate instruments, and in organizing, interpreting, and disseminating the data collected. Teacher educators will have to prepare a new breed of vocational educator who has competencies in the area of program evaluation. Institutes and other types of in-service training are also necessary to prepare personnel for the job to be done.

5. Evaluation is a challenge to all persons involved in vocational education!

   If vocational educators fail to supply data and information about their own programs using appropriate criteria and methodology, then they will have no recourse but to accept not only the data collected by others but also the value judgments reached by them.

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ATTACHMENT A

Objective: To develop in the students a favorable attitude toward continuing their education after graduation.*

Evidence of Obtaining Objective: If 80 percent of the graduates continue their education by enrolling in one or more of the following educational programs within five years after graduation, the program shall be considered successful in developing favorable attitudes towards continued education.

1. Post-secondary technical institute
2. Community or Junior College
3. College or University
4. Apprentice Program
5. Industrial sponsored training program
6. Private vocational-technical school
7. Correspondence program leading to a certificate or degree
8. Job upgrading program
9. Military job training

If 79 percent or less, but more than 49 percent of the students enroll in one or more of the above programs, the program shall be considered moderately successful in meeting the above objective.

If 49 percent or less enroll in one or more of the above programs, the program shall be considered unsuccessful in meeting the above objective.

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* This is one of a tentative set of program objectives for which specific terminal behavior characteristics and discriminatory levels have been identified by Dr. Jim Hannemann, Vocational Consultant at Oakland Schools, Pontiac, Michigan.